Fig. 1

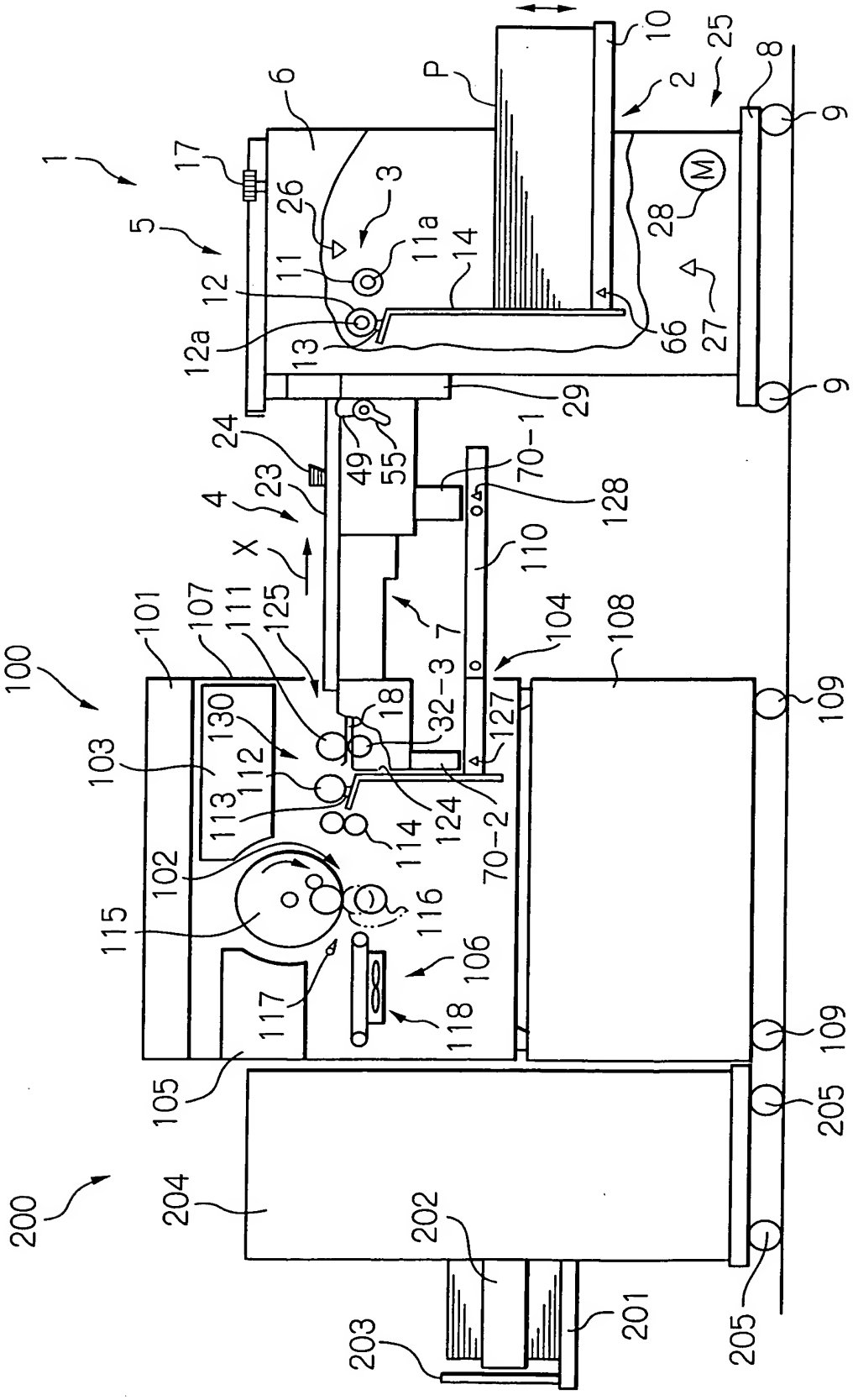


Fig. 2

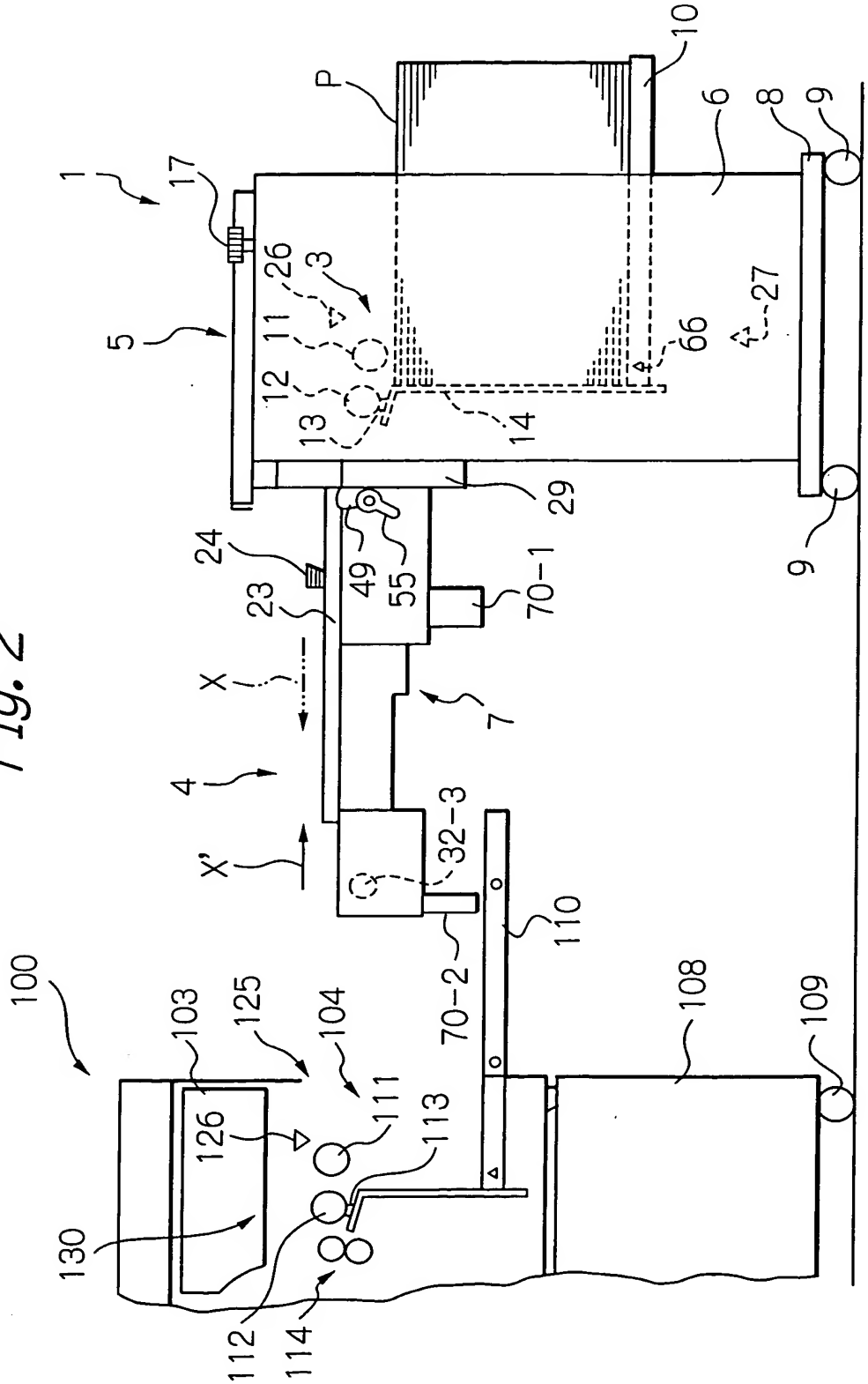

P
10
6
8
9
1
17
26
3
27
5
11
66
12
13
14
29
24
49
55
70-1
23
X
7
4
X'
32-3
110
100
103
125
104
70-2
108
109
111
113
126
130
112
114

Fig. 3

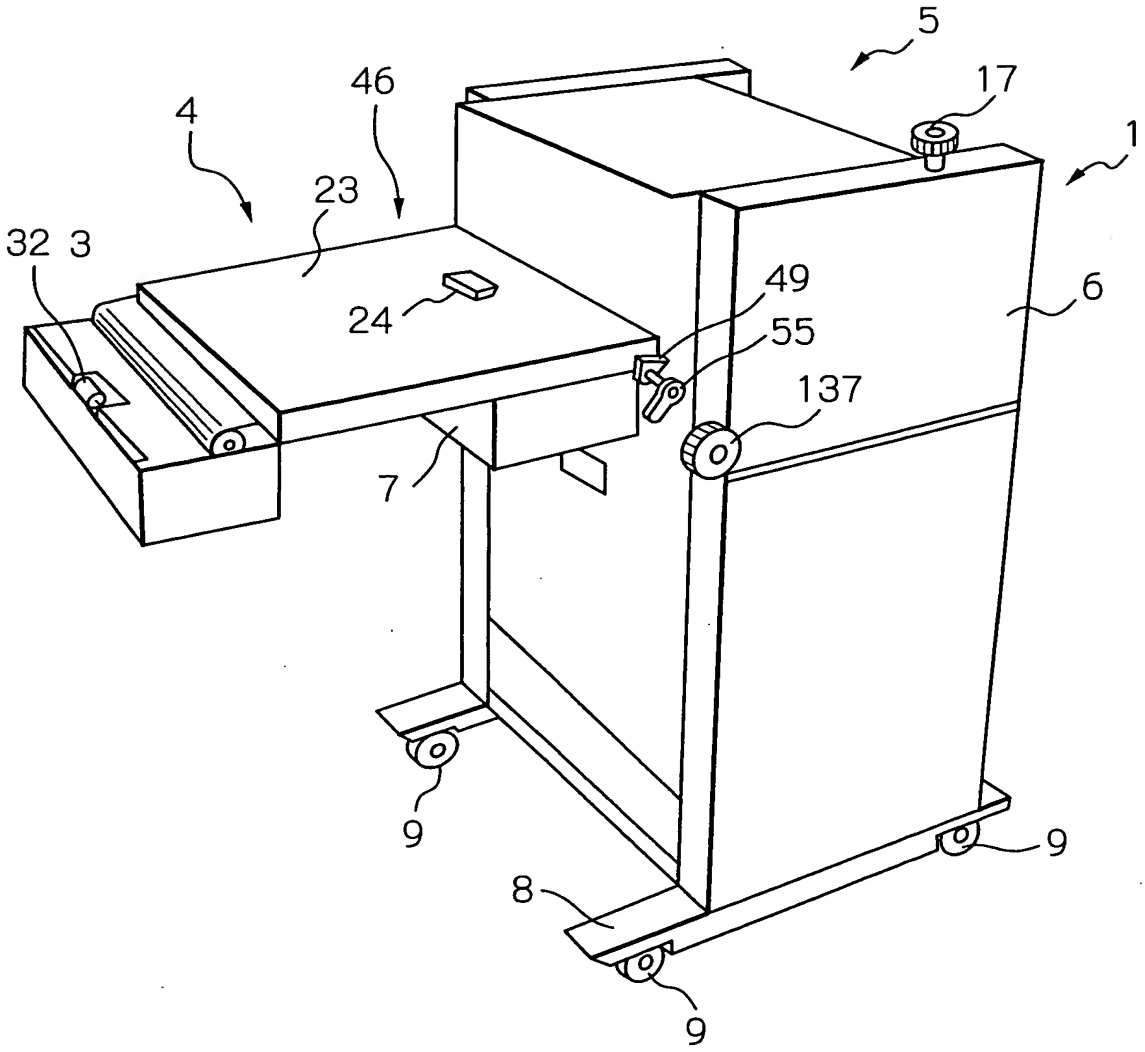


Fig. 4

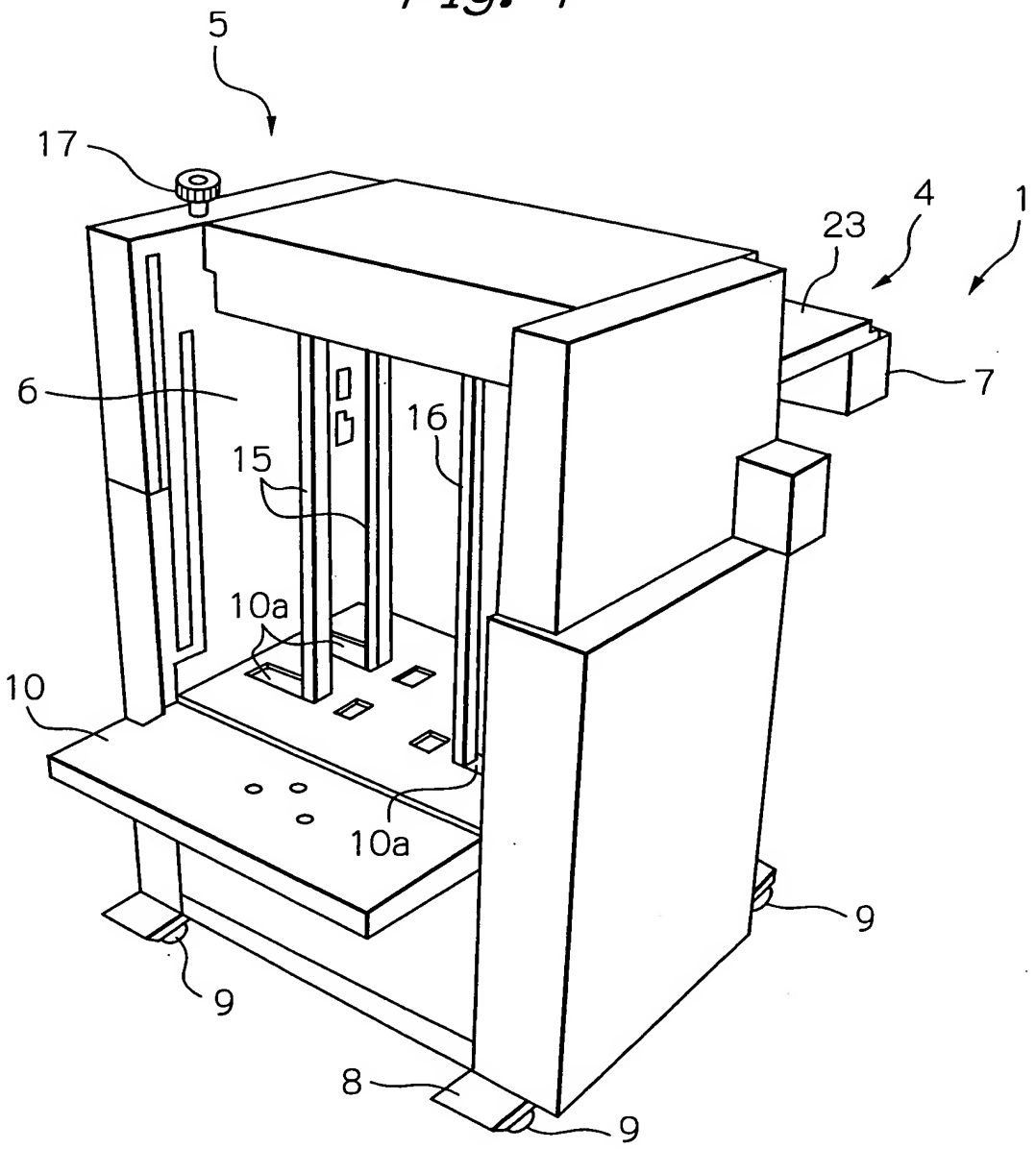
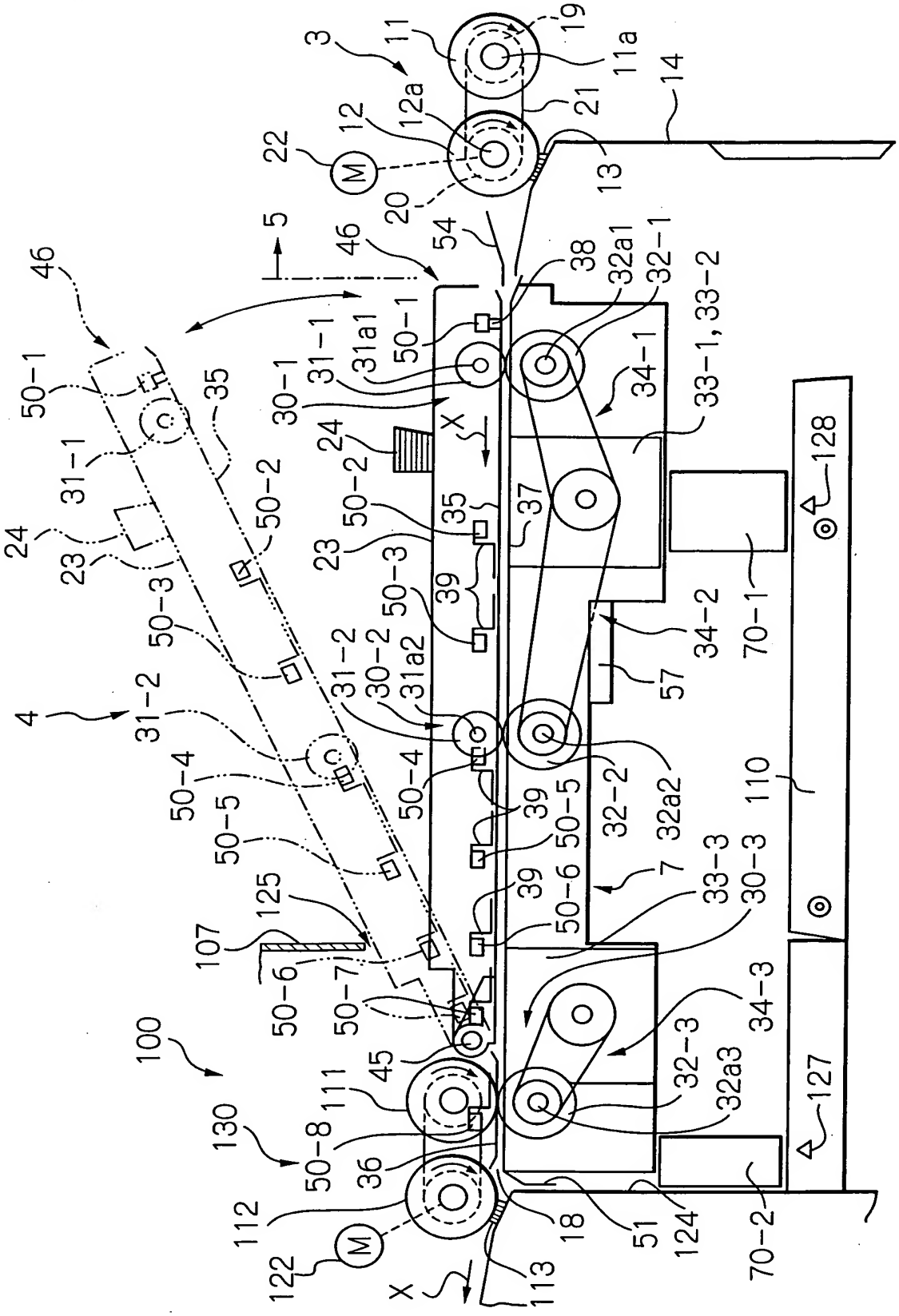


Fig. 5


3
11
19
11a
14
12
12a
21
22
M
20
13
5
46
54
38
32a1
32-1
50-1
31-1
31a1
30-1
34-1
33-1, 33-2
24
X
35
37
128
23
50-2
50-3
39
34-2
70-1
31-2
30-2
31a2
57
4
50-4
50-5
32-2
32a2
110
50-6
7
33-3
30-3
125
107
50-7
34-3
100
45
111
32-3
32a3
127
130
50-8
36
112
M
122
18
51
124
70-2
113
X

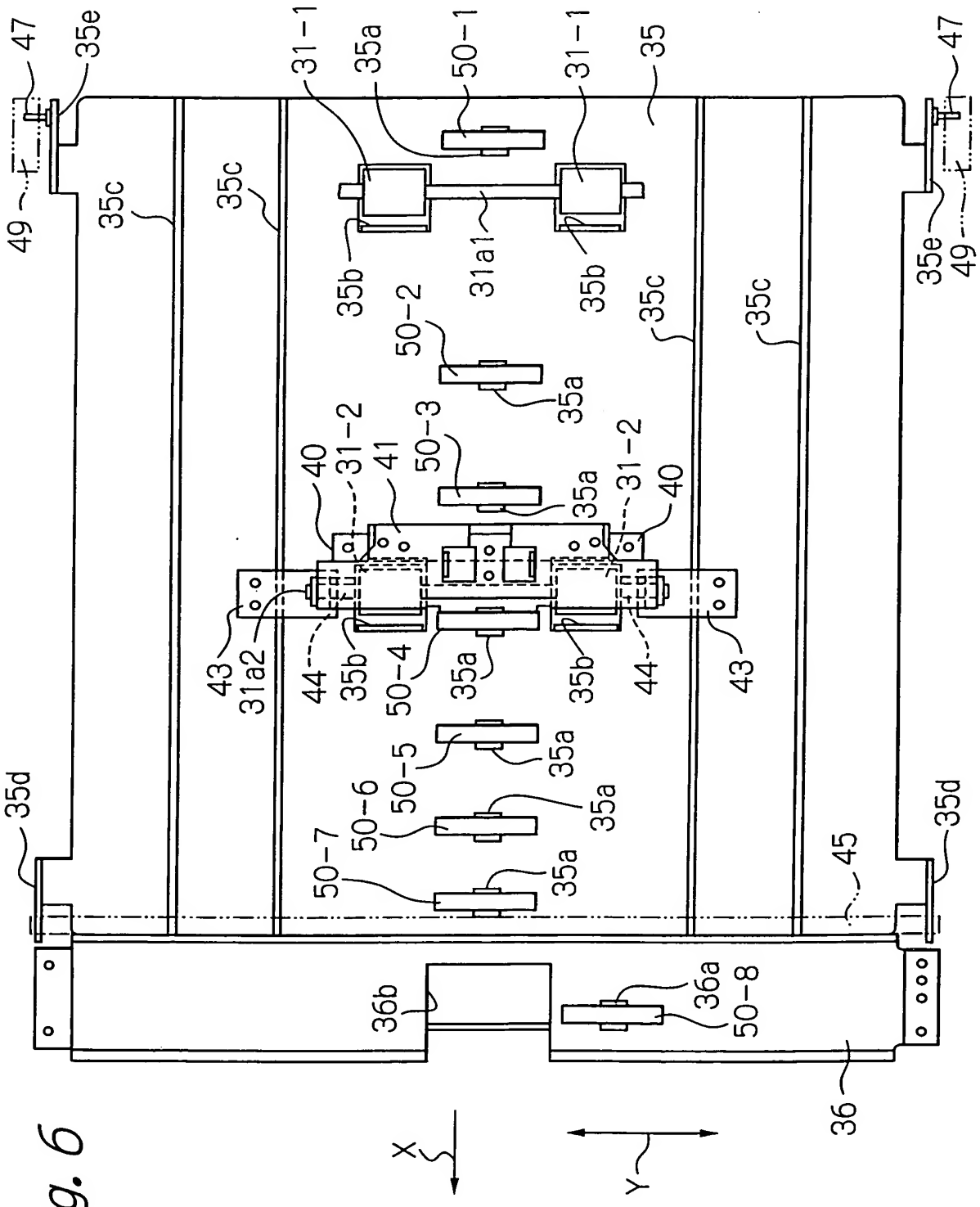

47
35e
31-1
35a
50-1
31-1
35
47
49
35c
35c
35b
31a1
35b
35c
35c
35e
49
50-2
35a
31-2
40
41
50-3
35a
31-2
40
43
31a2
44
35b
50-4
35a
35b
44
43
50-5
35a
35d
50-6
35a
50-7
35a
45
35d
36b
36a
50-8
36
X
Y

Fig. 6

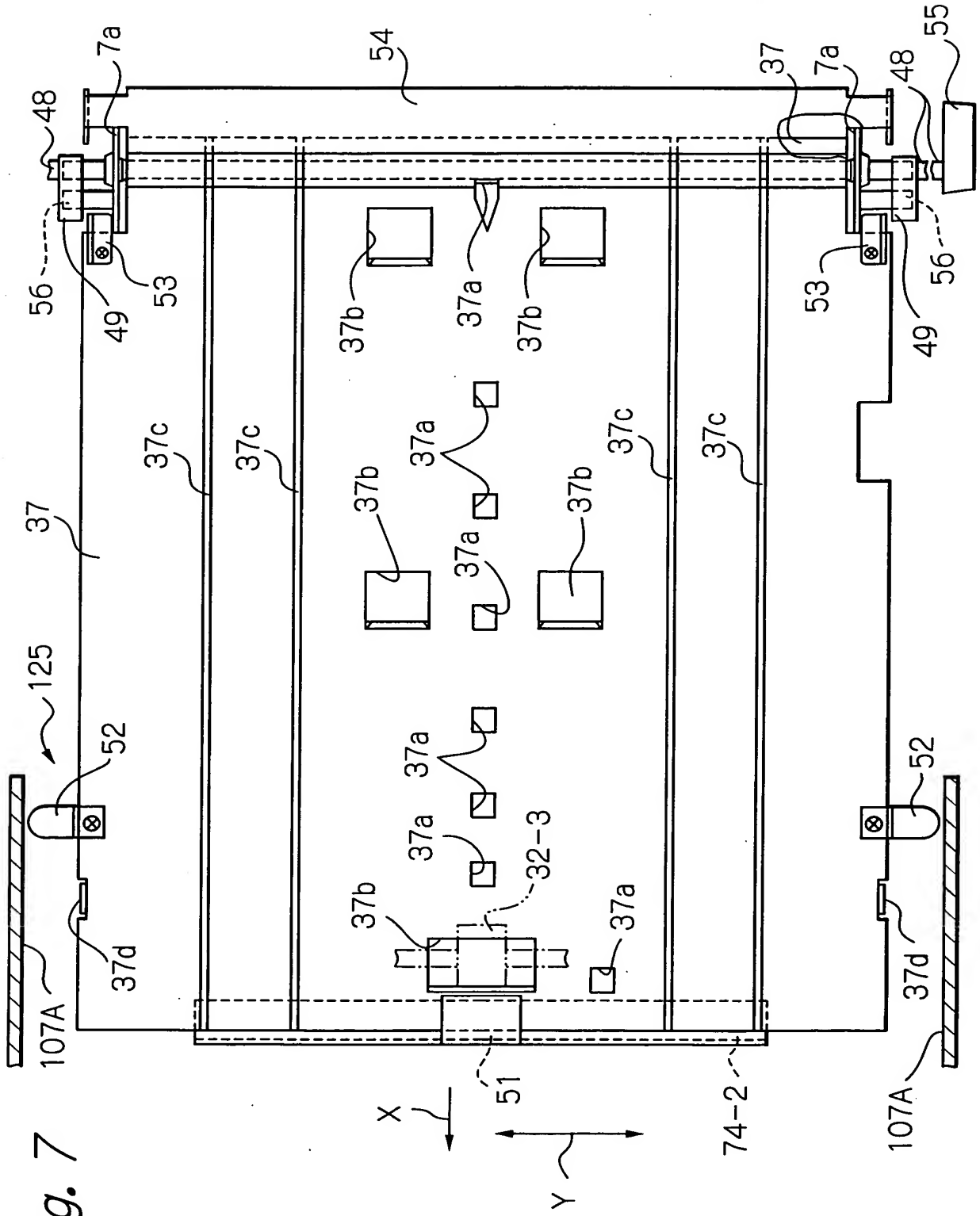

7a
54
37
7a
48
55
48
56
49
53
37b
37a
37b
53
56
49
37c
37c
37c
37c
37
37a
37b
37b
37a
125
52
37a
37a
32-3
37b
37a
52
37d
37d
107A
107A
51
74-2
X
Y

Fig. 7

Fig. 8

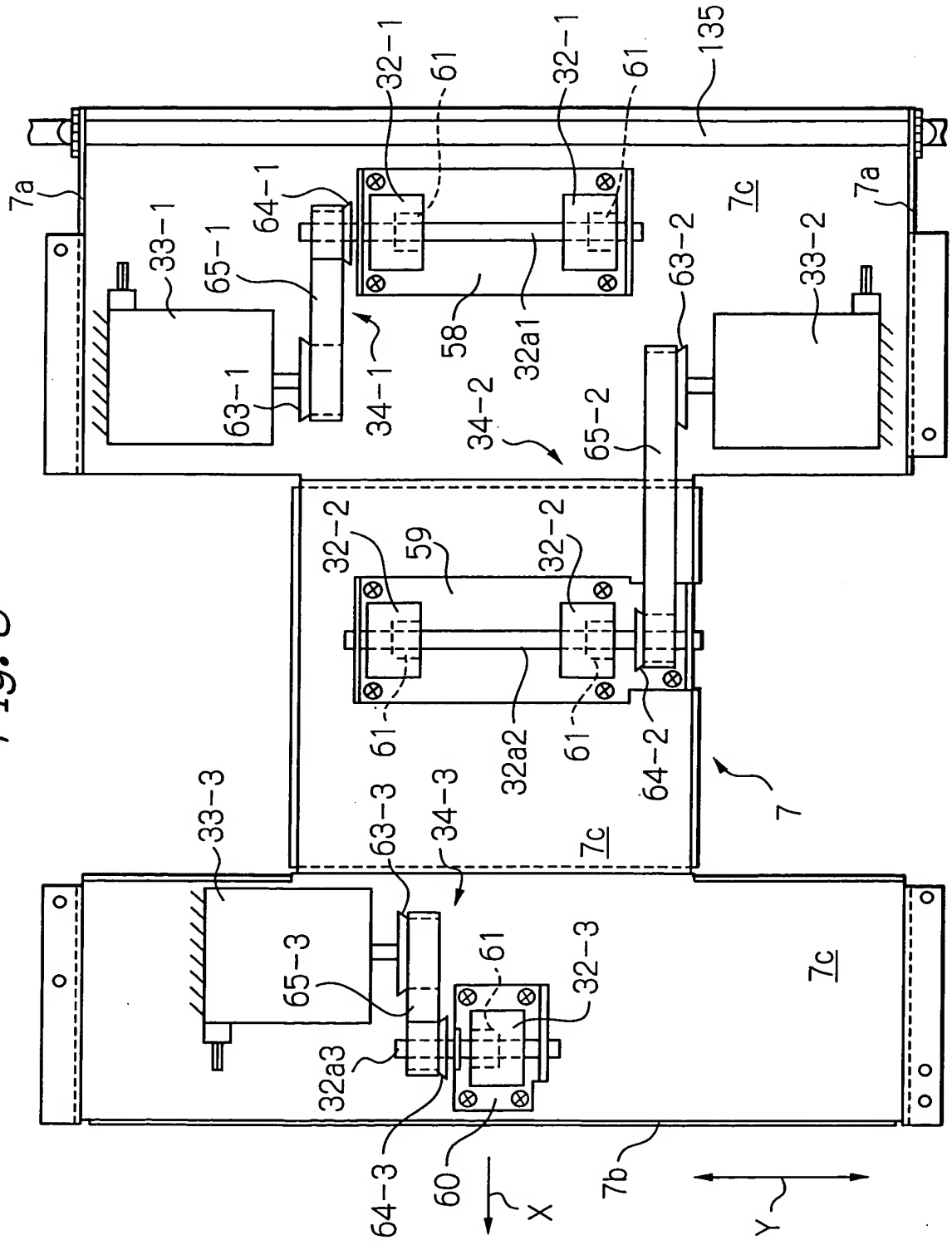

7a
33-1
65-1
64-1
32-1
61
32-1
61
135
7c
7a
63-2
33-2
63-1
34-1
58
32a1
34-2
65-2
32-2
59
32-2
61
32a2
61
64-2
7
33-3
63-3
34-3
7c
65-3
61
32-3
7c
32a3
64-3
60
X
7b
Y

Fig. 9A

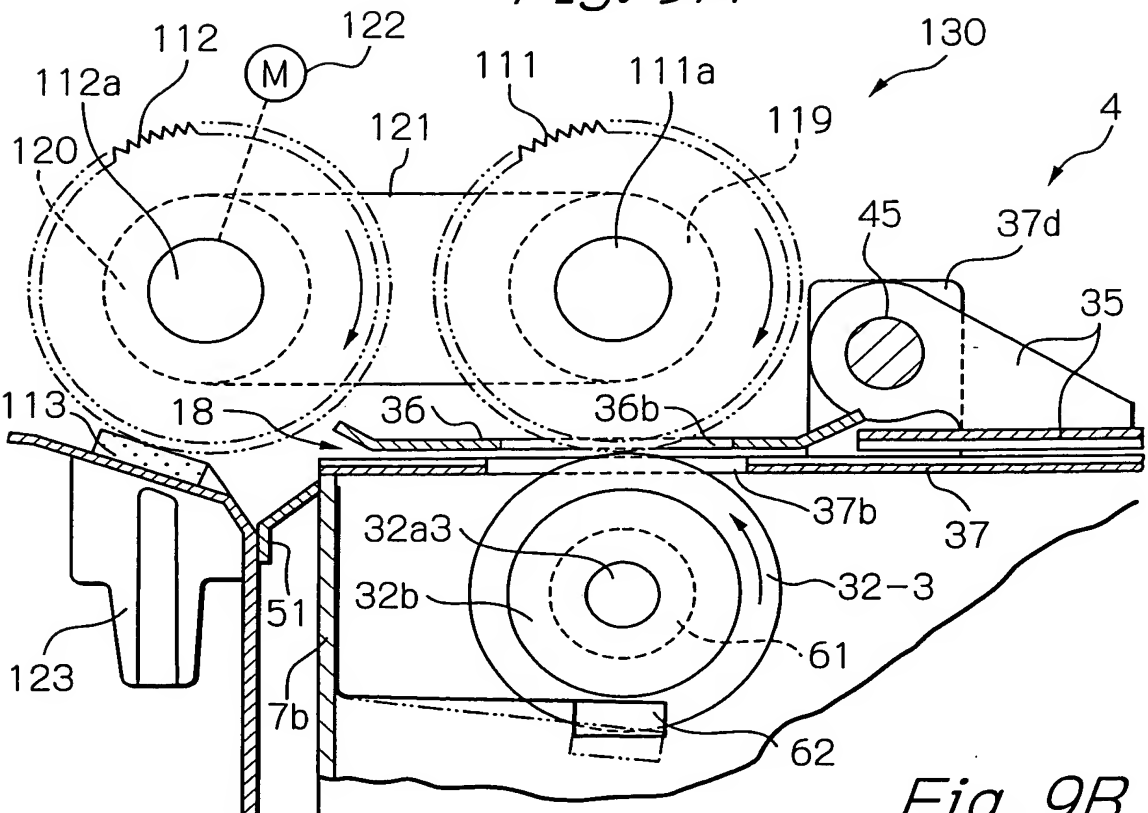

112
122
M
112a
111
111a
130
120
121
119
4
45
37d
35
113
18
36
36b
37b
37
32a3
32-3
32b
51
61
123
7b
62
124

Fig. 9B

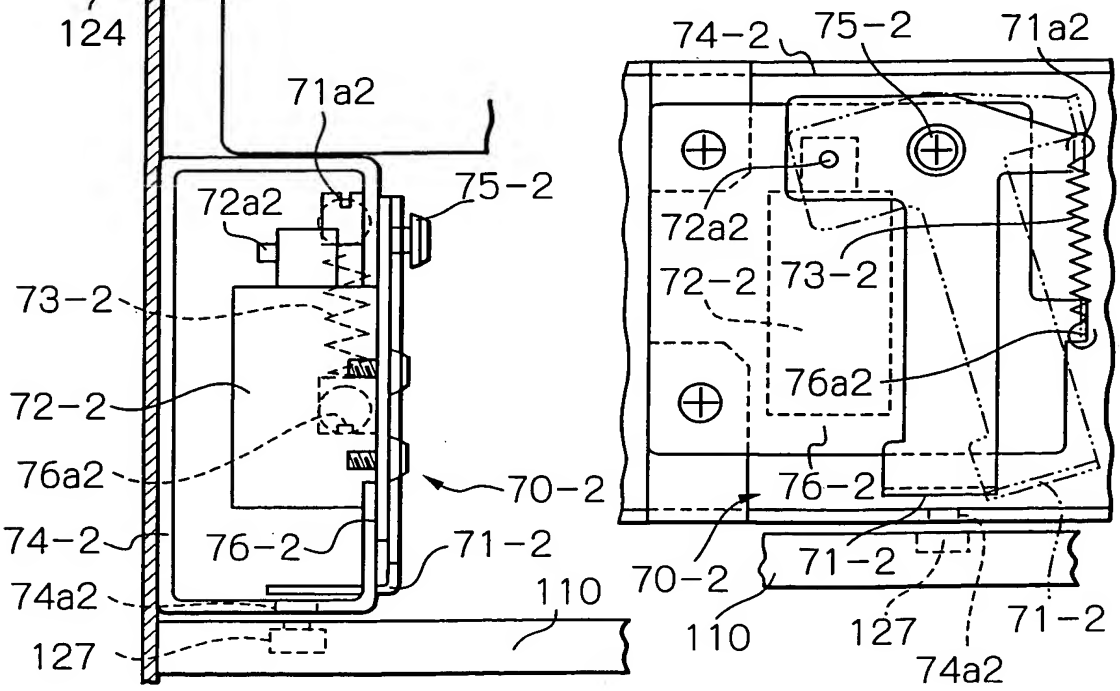

74-2
75-2
71a2
72a2
73-2
72-2
76a2
70-2
76-2
71-2
74a2
110
127

Fig. 10

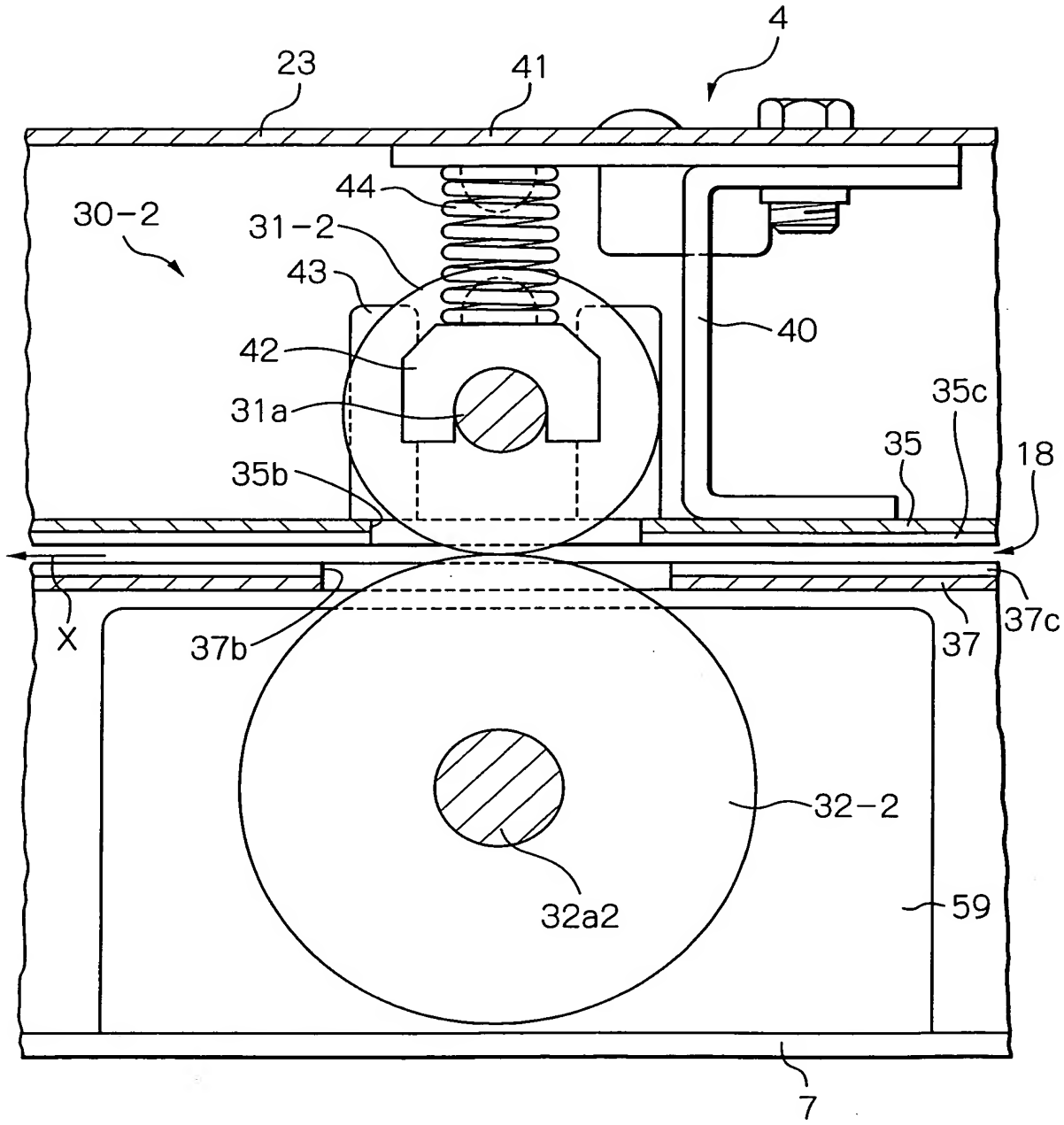
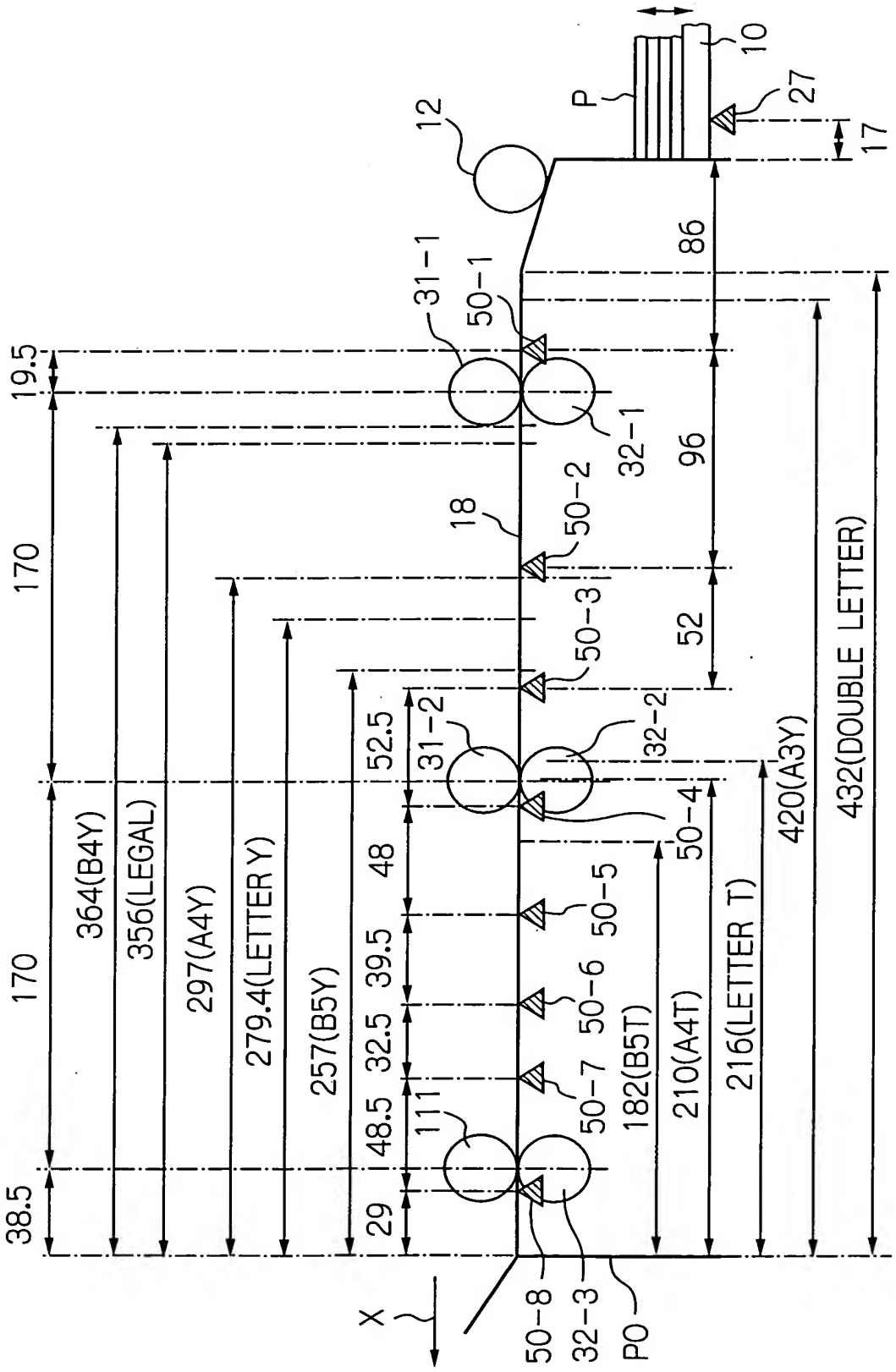

4
23
41
44
30-2
31-2
43
42
31a
35b
40
35c
35
18
X
37b
37
37c
32-2
32a2
59
7

Fig. 11


P
10
27
17
12
86
31-1
50-1
19.5
32-1
96
18
50-2
170
50-3
52
52.5
31-2
32-2
420(A3Y)
432(DOUBLE LETTER)
50-4
48
50-5
39.5
50-6
32.5
50-7
48.5
111
182(B5T)
210(A4T)
216(LETTER T)
257(B5Y)
279.4(LETTER Y)
297(A4Y)
356(LEGAL)
364(B4Y)
170
38.5
29
X
50-8
32-3
PO

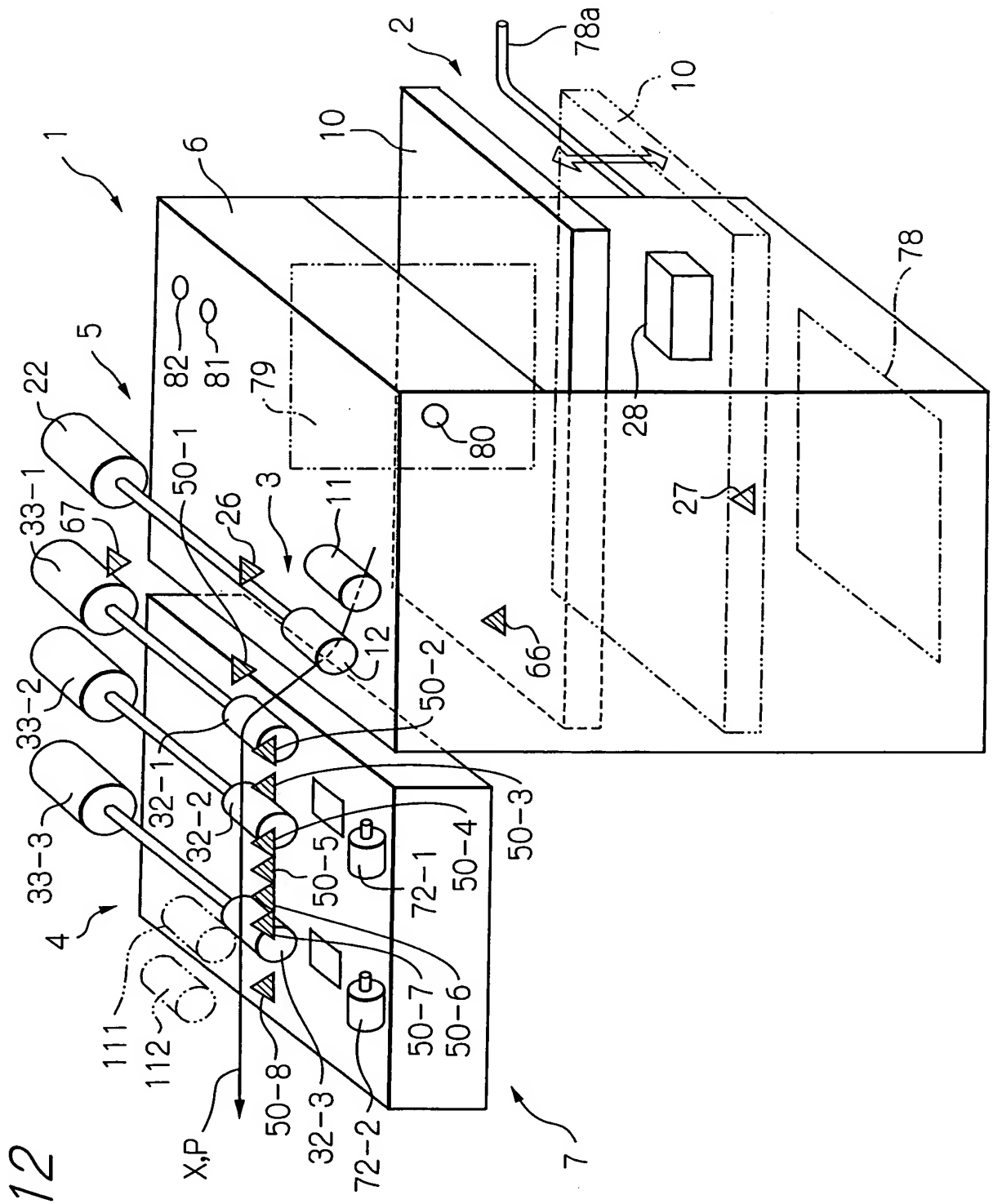
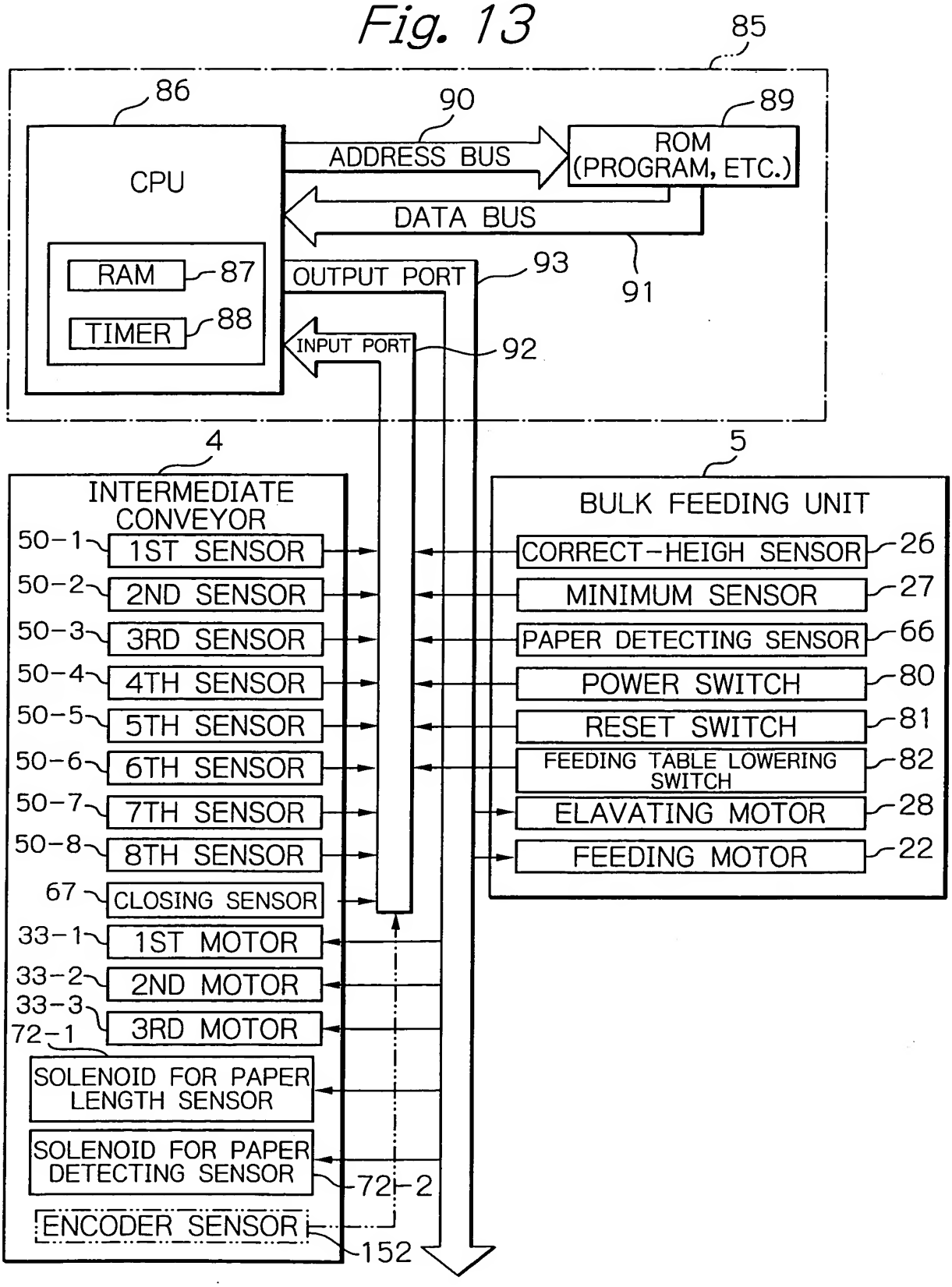

1
2
3
4
5
6
7
10
11
12
22
26
27
28
33-1
33-2
33-3
50-1
50-2
50-3
50-4
50-5
50-6
50-7
50-8
66
67
72-1
72-2
78
78a
79
80
81
82
111
112
32-1
32-2
32-3
X,P

Fig. 12

Fig. 13


85
86
CPU
90
ADDRESS BUS
89
ROM
(PROGRAM, ETC.)
DATA BUS
91
RAM
87
TIMER
88
OUTPUT PORT
93
INPUT PORT
92
4
INTERMEDIATE CONVEYOR
50-1
1ST SENSOR
50-2
2ND SENSOR
50-3
3RD SENSOR
50-4
4TH SENSOR
50-5
5TH SENSOR
50-6
6TH SENSOR
50-7
7TH SENSOR
50-8
8TH SENSOR
67
CLOSING SENSOR
33-1
1ST MOTOR
33-2
2ND MOTOR
33-3
3RD MOTOR
72-1
SOLENOID FOR PAPER LENGTH SENSOR
SOLENOID FOR PAPER DETECTING SENSOR
72-2
ENCODER SENSOR
152
5
BULK FEEDING UNIT
CORRECT-HEIGH SENSOR
26
MINIMUM SENSOR
27
PAPER DETECTING SENSOR
66
POWER SWITCH
80
RESET SWITCH
81
FEEDING TABLE LOWERING SWITCH
82
ELAVATING MOTOR
28
FEEDING MOTOR
22

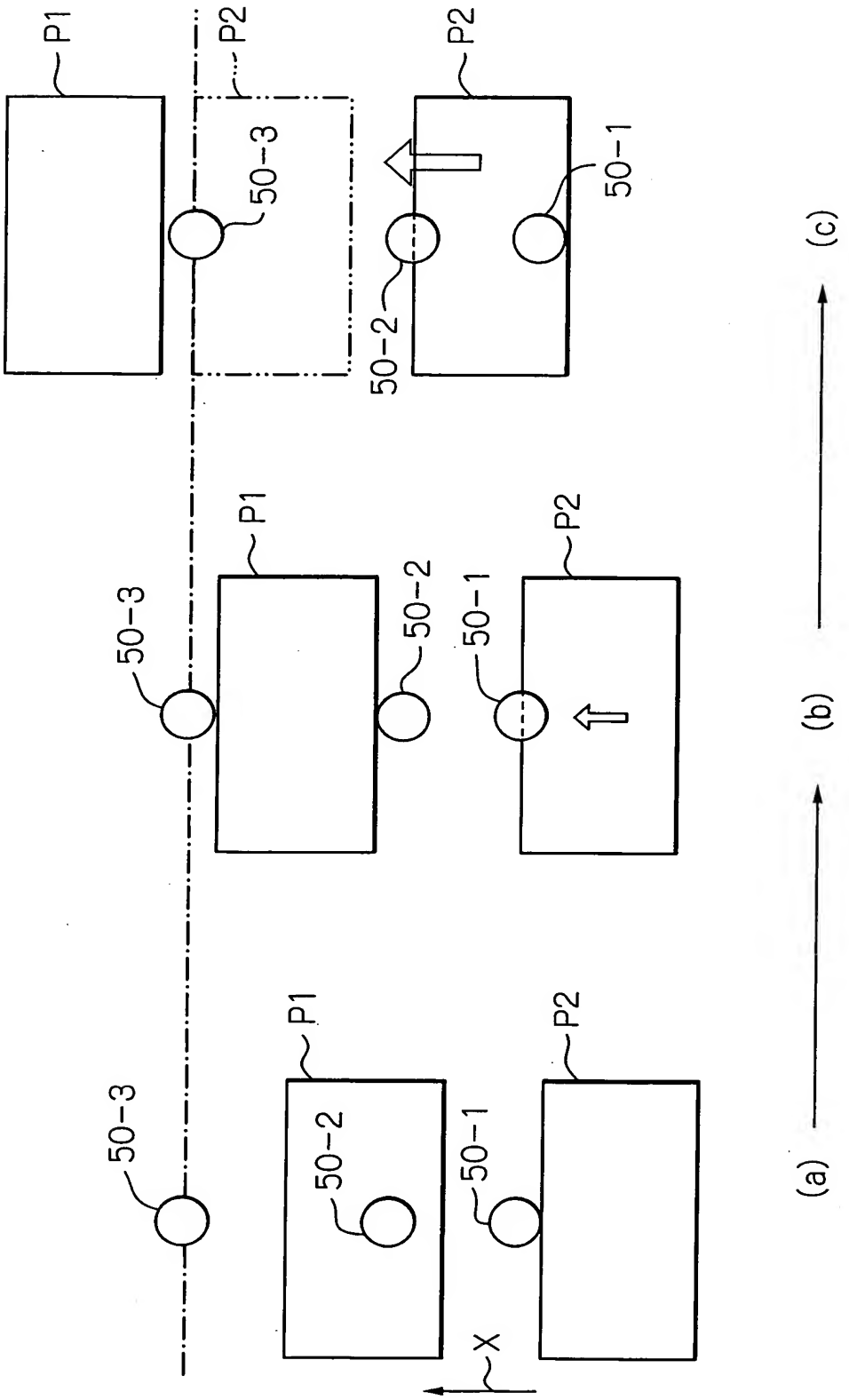


Fig. 14

Fig. 15

PRINTING SPEED	PAPER LENGTH (FIRST TO EIGHT SENSORS)	PAPER SIZE	INITIAL POSITION OF PAPER TRAILING EDGE : BETWEEN SENSORS	MEASUREMENT OF TIME BETWEEN SENSORS IN SPEED MEASURING ZONE	2ND SHEET INTAKE SENSOR (TRANSPORT TYPE)
16rpm 30rpm	LONG SIZE	DLY, A3Y	0-1	1-2	1ST SENSOR
		B4Y, LEGAL Y	1-2	2-3	2ND SENSOR
	SHORT SIZE	A4Y, B5Y,	2-3	3-5	3RD SENSOR
		A4T, LETTER T	3-4	4-6	4TH SENSOR
		B5T	4-5	5-7	6TH SENSOR
OTHER SPEED	LONG SIZE	DLY, A3Y	0-1	1-2	1ST SENSOR
		B4Y, LEGAL Y	1-2	2-3	2ND SENSOR
	SHORT SIZE	A4Y, B5Y, LETTER Y	2-3	3-5	3RD SENSOR
		A4T, LETTER T	3-4	4-6	4TH SENSOR
		B5T	4-5	5-7	6TH SENSOR

Fig. 16

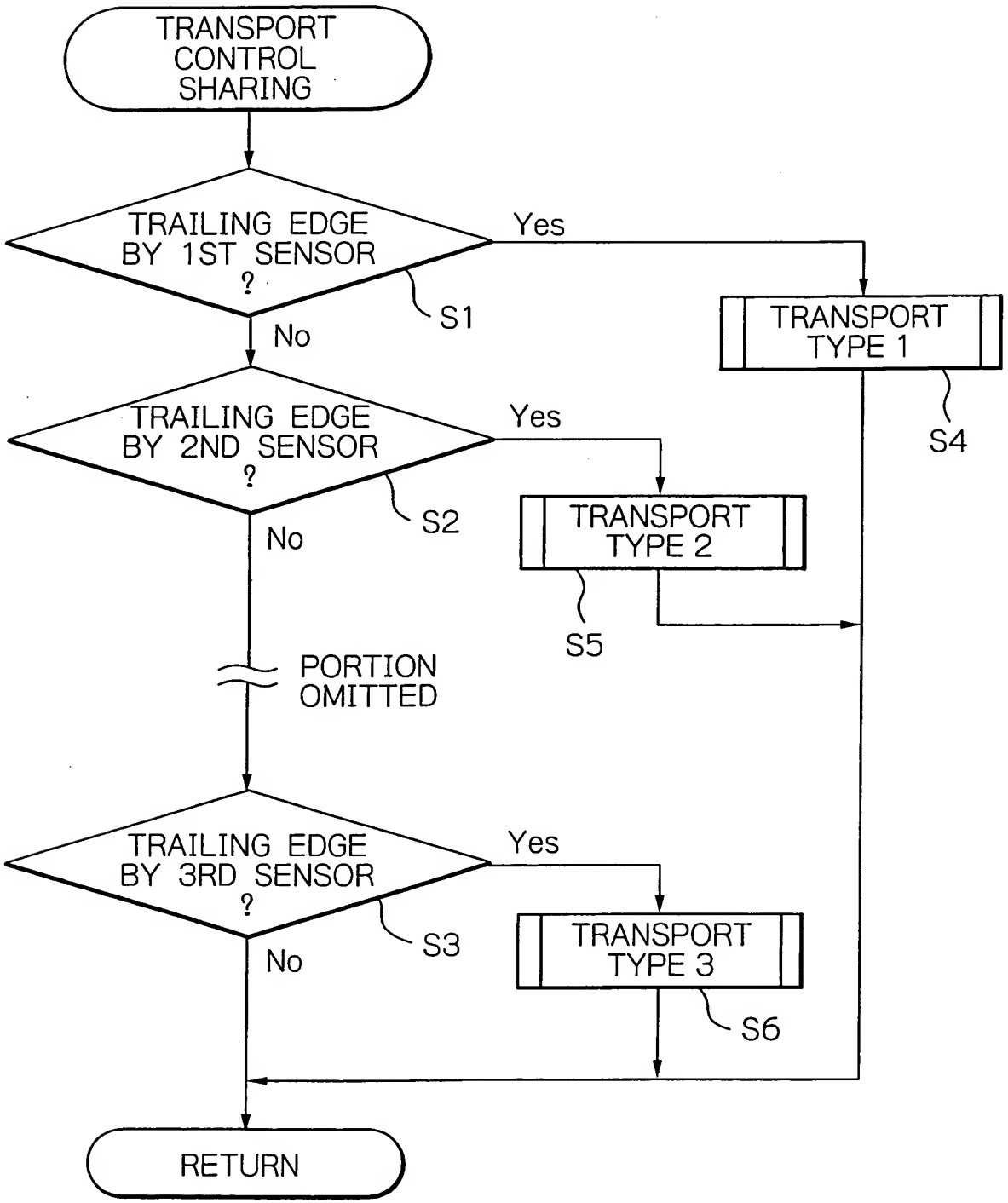

TRANSPORT CONTROL SHARING
TRAILING EDGE BY 1ST SENSOR ?
Yes
S1
No
TRANSPORT TYPE 1
S4
TRAILING EDGE BY 2ND SENSOR ?
Yes
S2
No
TRANSPORT TYPE 2
S5
PORTION OMITTED
TRAILING EDGE BY 3RD SENSOR ?
Yes
S3
No
TRANSPORT TYPE 3
S6
RETURN

Fig. 17

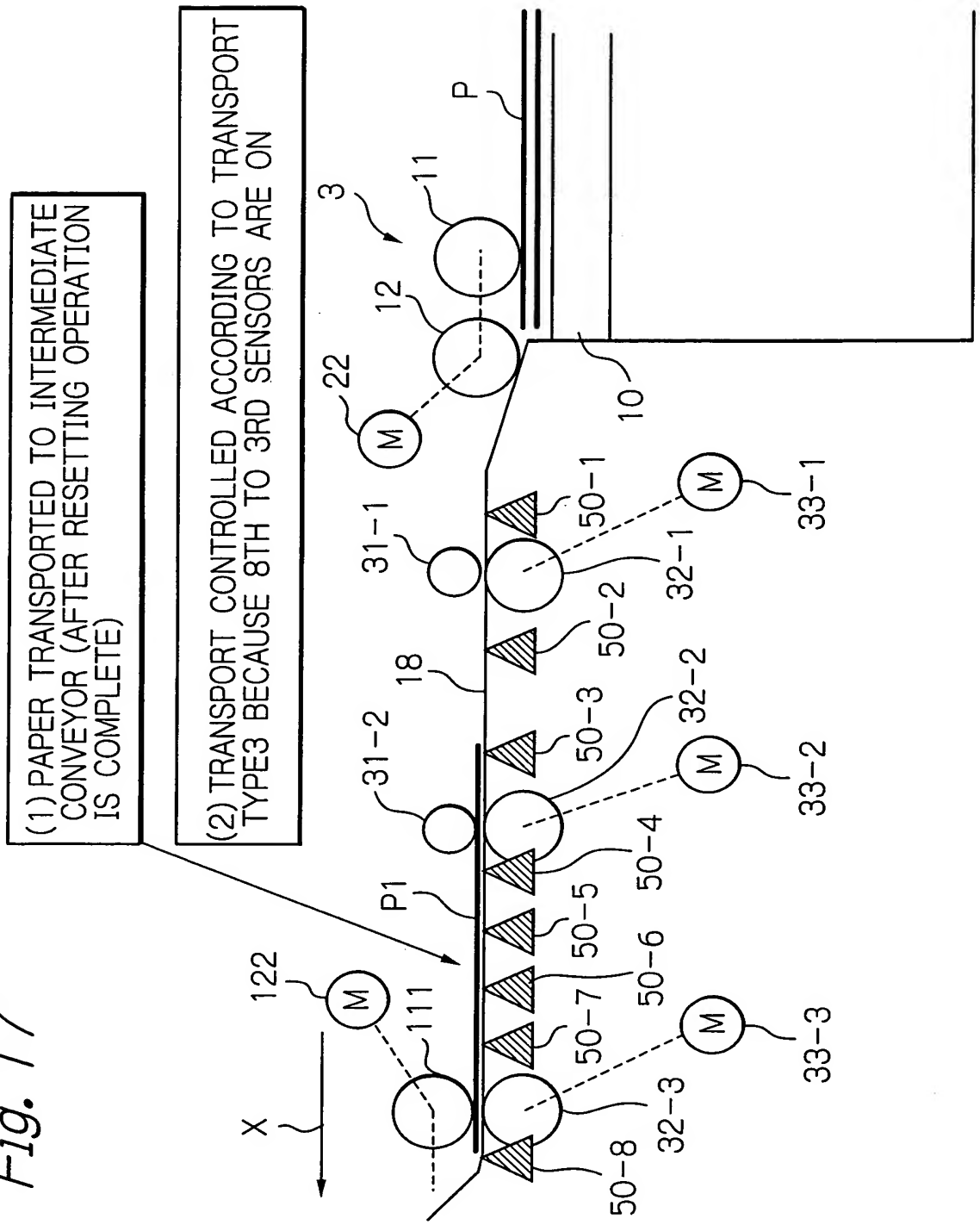

(1) PAPER TRANSPORTED TO INTERMEDIATE CONVEYOR (AFTER RESETTING OPERATION IS COMPLETE)
(2) TRANSPORT CONTROLLED ACCORDING TO TRANSPORT TYPE3 BECAUSE 8TH TO 3RD SENSORS ARE ON
P
3
11
12
22
M
10
31-1
50-1
32-1
33-1
50-2
18
31-2
50-3
32-2
33-2
50-4
P1
50-5
50-6
122
111
50-7
33-3
X
32-3
50-8

Fig. 18A

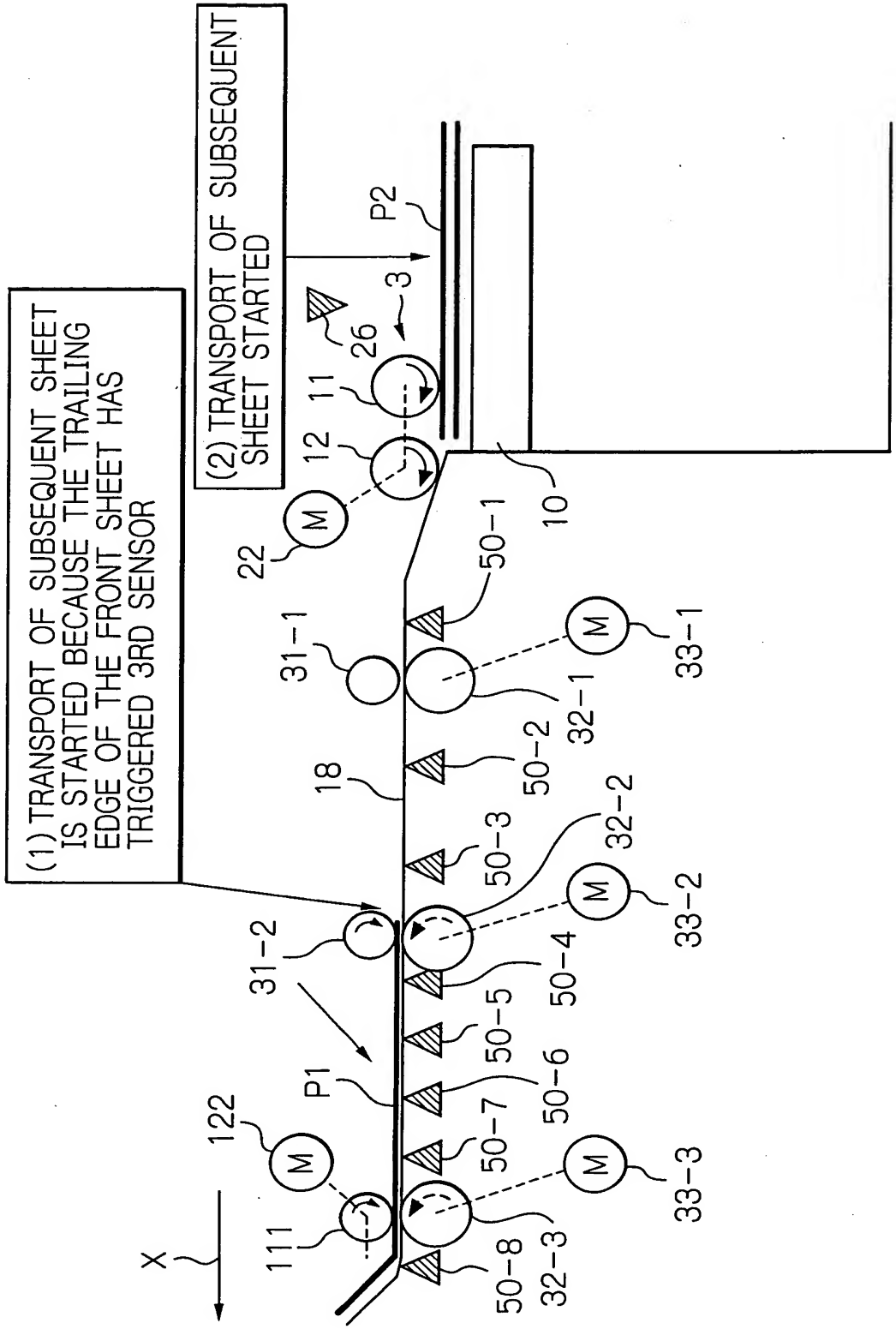

(1) TRANSPORT OF SUBSEQUENT SHEET IS STARTED BECAUSE THE TRAILING EDGE OF THE FRONT SHEET HAS TRIGGERED 3RD SENSOR
(2) TRANSPORT OF SUBSEQUENT SHEET STARTED
P2
3
26
11
12
10
22
M
50-1
31-1
32-1
33-1
18
50-2
50-3
32-2
33-2
31-2
50-4
50-5
50-6
P1
122
50-7
33-3
111
50-8
32-3
X

Fig. 18B

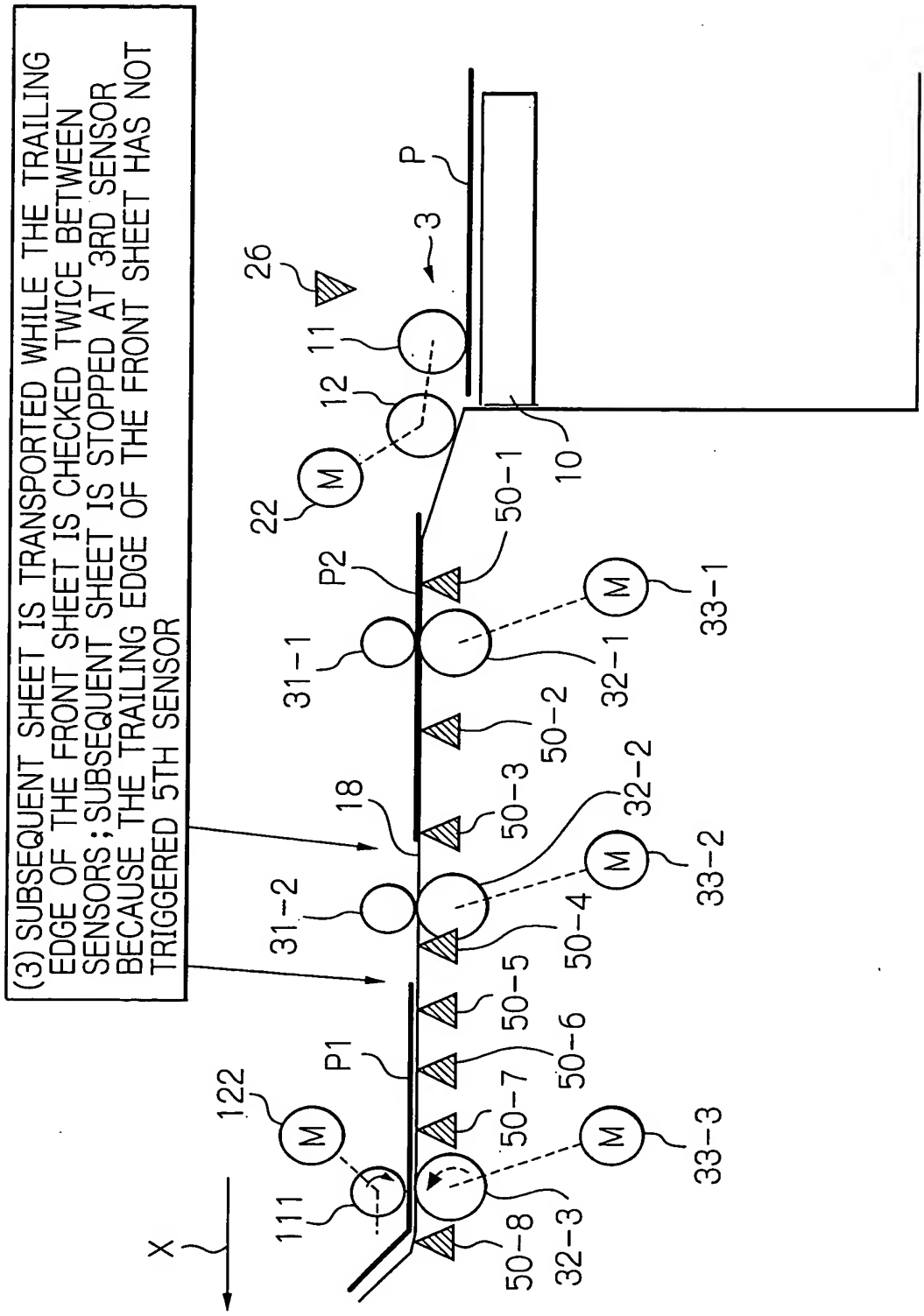

(3) SUBSEQUENT SHEET IS TRANSPORTED WHILE THE TRAILING EDGE OF THE FRONT SHEET IS CHECKED TWICE BETWEEN SENSORS; SUBSEQUENT SHEET IS STOPPED AT 3RD SENSOR BECAUSE THE TRAILING EDGE OF THE FRONT SHEET HAS NOT TRIGGERED 5TH SENSOR
X
111
122
M
P1
50-8
32-3
50-7
50-6
50-5
50-4
31-2
18
50-3
32-2
33-2
50-2
31-1
P2
50-1
32-1
33-1
22
12
11
26
3
P
10
33-3

Fig. 19A

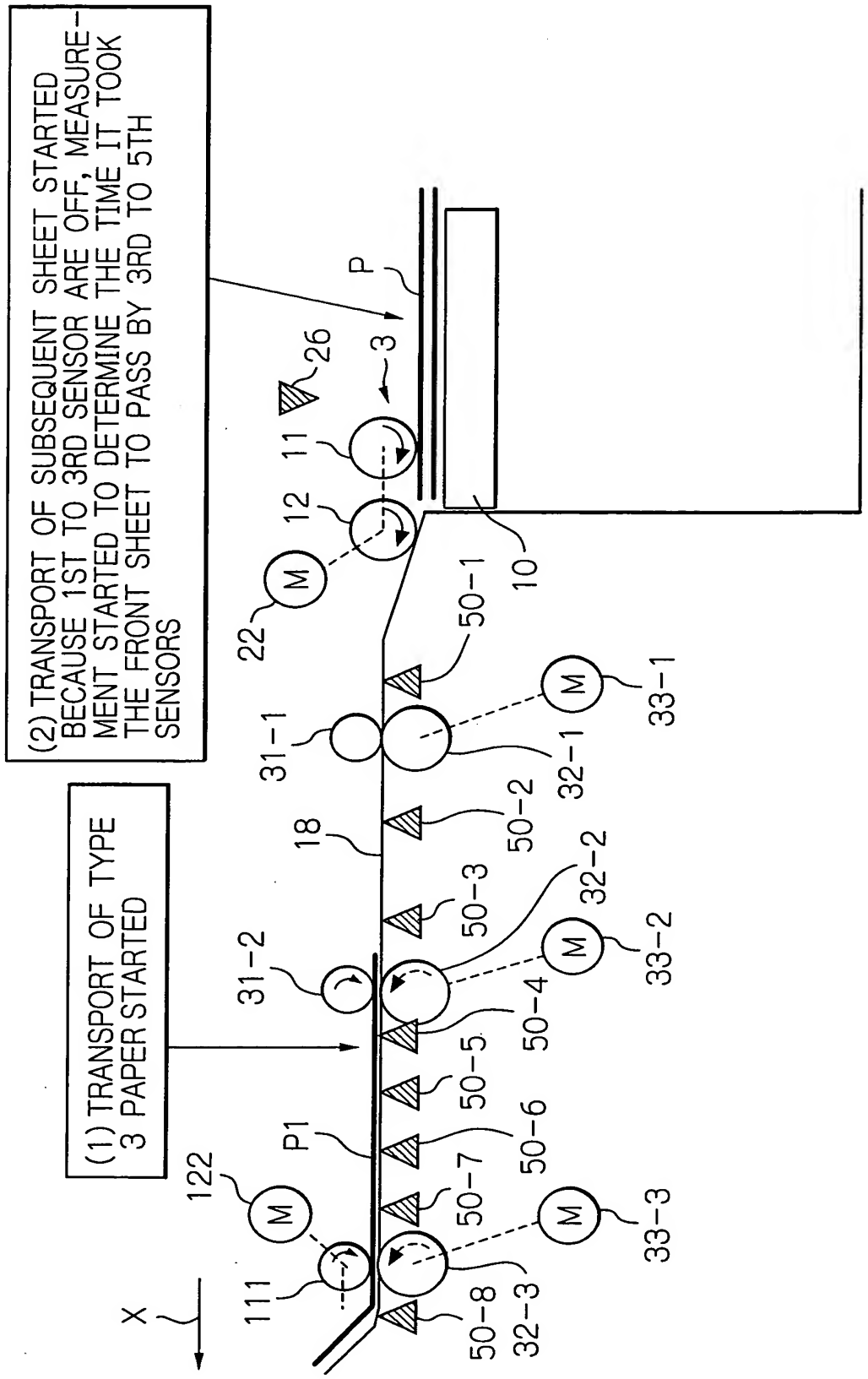

(2) TRANSPORT OF SUBSEQUENT SHEET STARTED BECAUSE 1ST TO 3RD SENSOR ARE OFF, MEASUREMENT STARTED TO DETERMINE THE TIME IT TOOK THE FRONT SHEET TO PASS BY 3RD TO 5TH SENSORS
(1) TRANSPORT OF TYPE 3 PAPER STARTED
P
3
26
11
12
22
M
10
50-1
31-1
32-1
33-1
18
50-2
50-3
31-2
32-2
33-2
50-4
50-5
50-6
P1
122
50-7
33-3
111
50-8
32-3
X

Fig. 19B

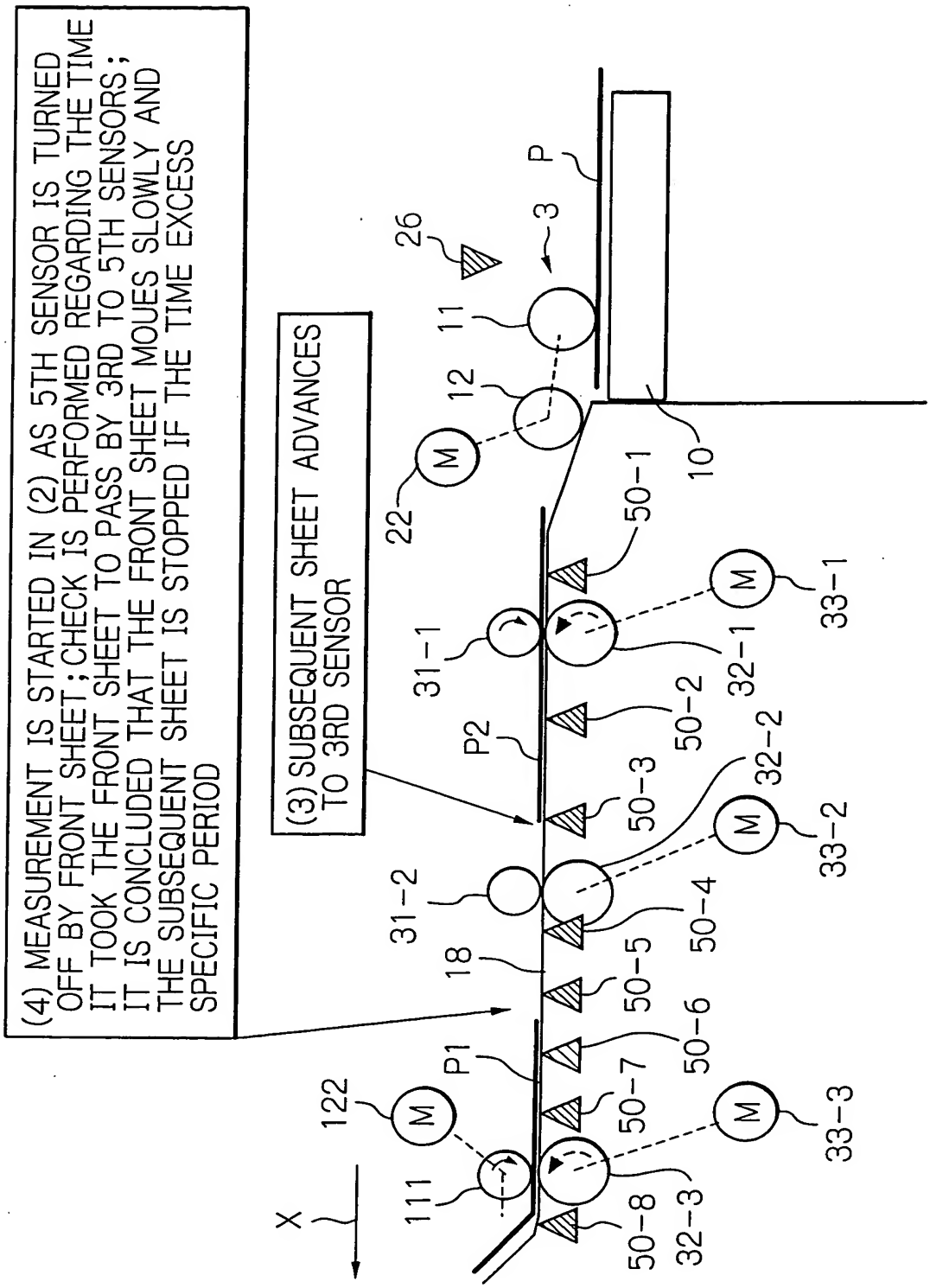

(4) MEASUREMENT IS STARTED IN (2) AS 5TH SENSOR IS TURNED OFF BY FRONT SHEET; CHECK IS PERFORMED REGARDING THE TIME IT TOOK THE FRONT SHEET TO PASS BY 3RD TO 5TH SENSORS; IT IS CONCLUDED THAT THE FRONT SHEET MOUES SLOWLY AND THE SUBSEQUENT SHEET IS STOPPED IF THE TIME EXCESS SPECIFIC PERIOD
(3) SUBSEQUENT SHEET ADVANCES TO 3RD SENSOR
X
111
122
M
P1
18
P2
31-1
31-2
22
M
12
11
26
3
P
10
50-1
50-2
50-3
50-4
50-5
50-6
50-7
50-8
32-1
32-2
32-3
M
M
M
33-1
33-2
33-3

Fig. 20

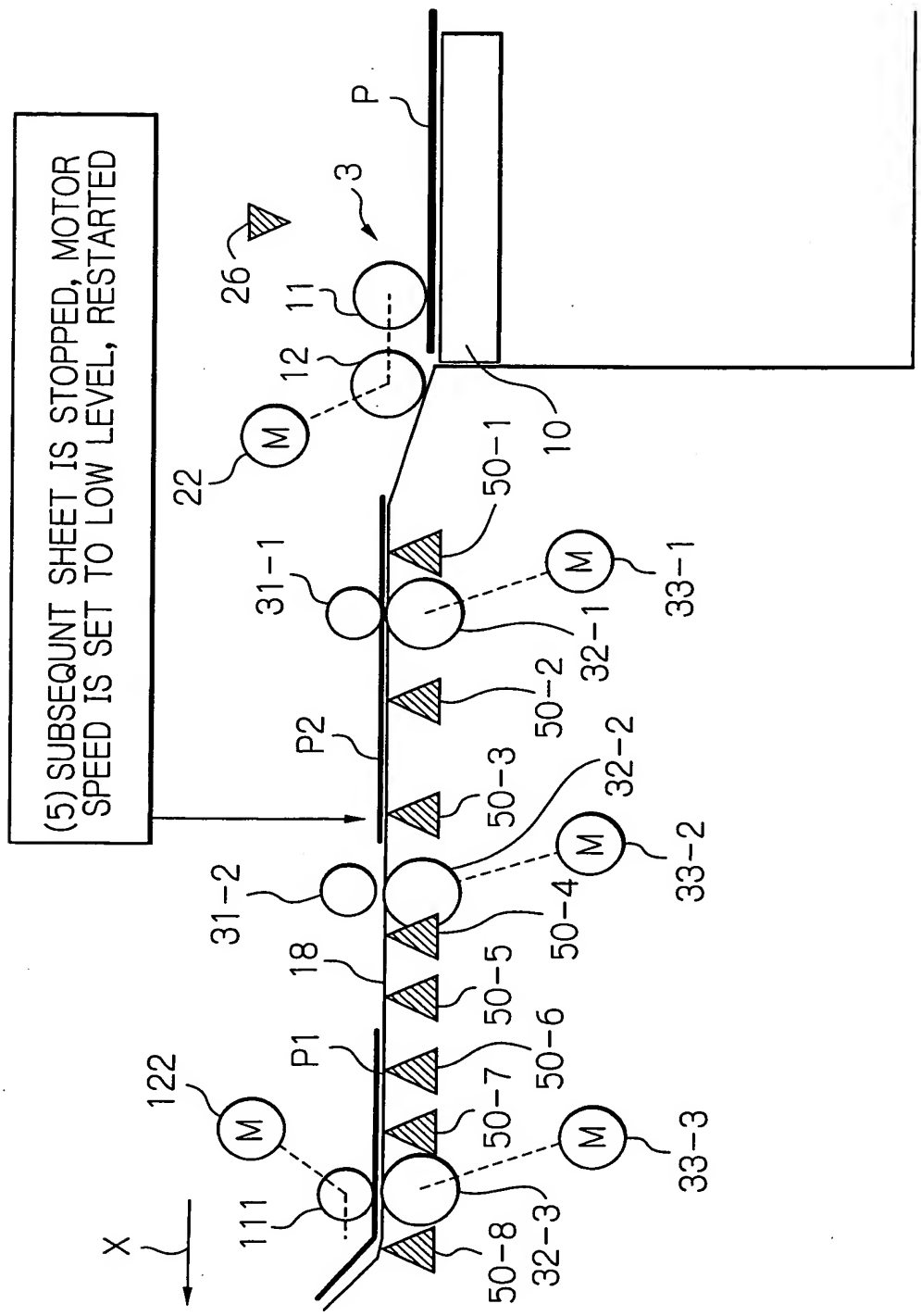

(5) SUBSEQUNT SHEET IS STOPPED, MOTOR SPEED IS SET TO LOW LEVEL, RESTARTED
P
3
26
11
12
10
22
M
50-1
31-1
32-1
33-1
50-2
P2
50-3
32-2
33-2
31-2
50-4
18
50-5
50-6
P1
122
50-7
33-3
111
50-8
32-3
X

Fig. 21

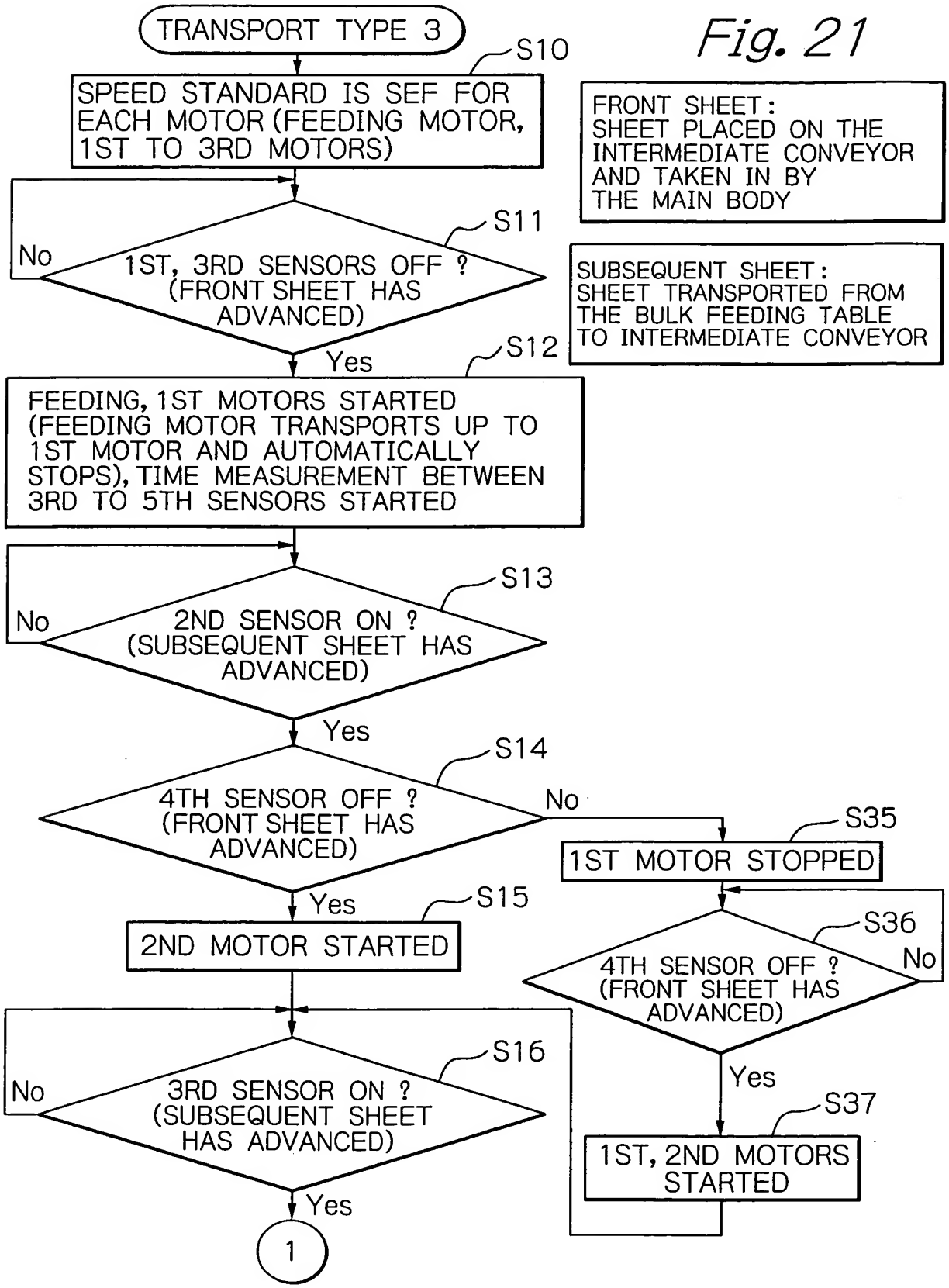

TRANSPORT TYPE 3
S10
SPEED STANDARD IS SEF FOR EACH MOTOR (FEEDING MOTOR, 1ST TO 3RD MOTORS)
S11
No
1ST, 3RD SENSORS OFF ? (FRONT SHEET HAS ADVANCED)
Yes
S12
FEEDING, 1ST MOTORS STARTED (FEEDING MOTOR TRANSPORTS UP TO 1ST MOTOR AND AUTOMATICALLY STOPS), TIME MEASUREMENT BETWEEN 3RD TO 5TH SENSORS STARTED
S13
No
2ND SENSOR ON ? (SUBSEQUENT SHEET HAS ADVANCED)
Yes
S14
4TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
S35
1ST MOTOR STOPPED
Yes
S15
2ND MOTOR STARTED
S36
4TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S37
1ST, 2ND MOTORS STARTED
S16
No
3RD SENSOR ON ? (SUBSEQUENT SHEET HAS ADVANCED)
Yes
1
FRONT SHEET: SHEET PLACED ON THE INTERMEDIATE CONVEYOR AND TAKEN IN BY THE MAIN BODY
SUBSEQUENT SHEET: SHEET TRANSPORTED FROM THE BULK FEEDING TABLE TO INTERMEDIATE CONVEYOR

Fig. 22

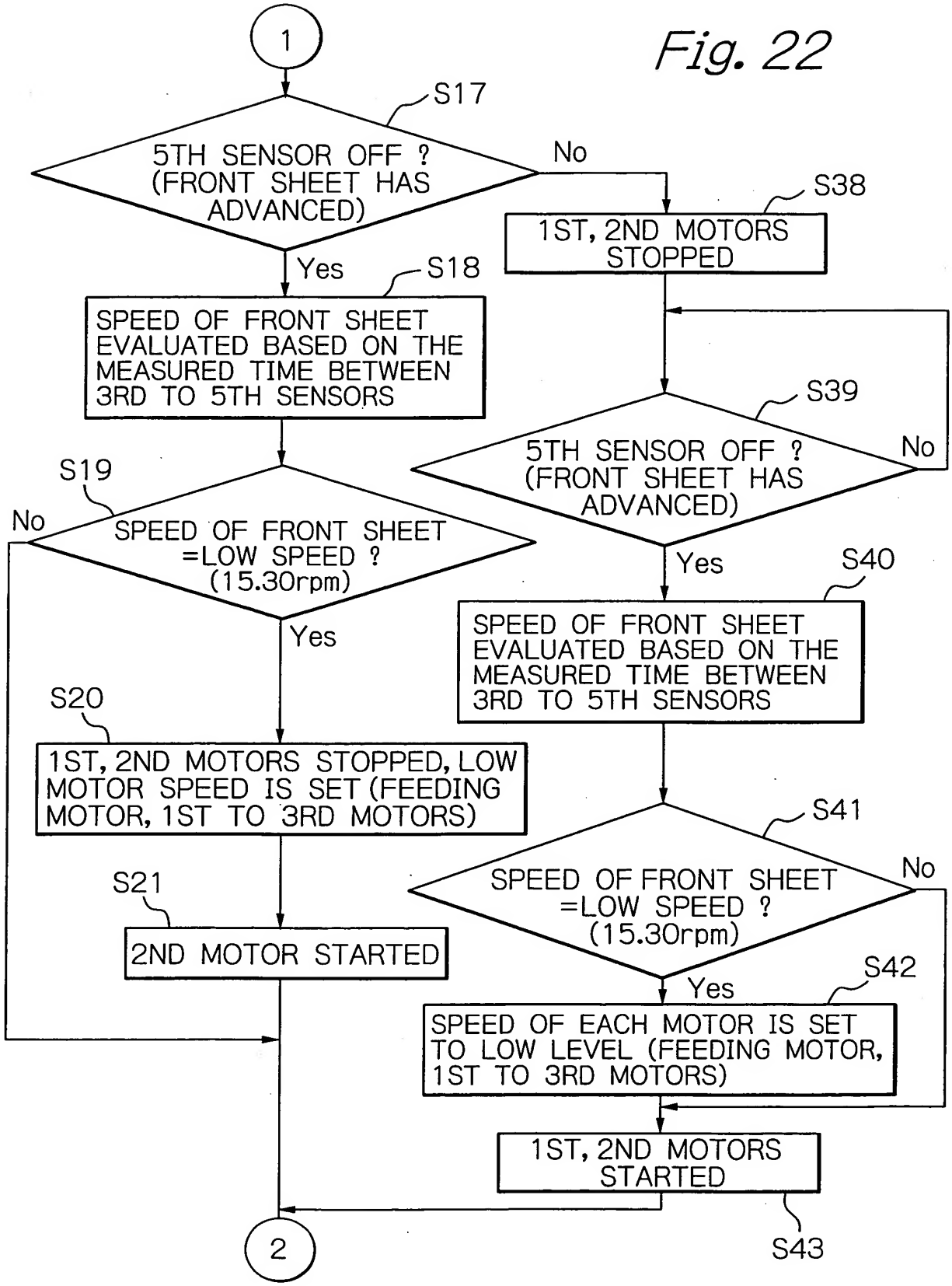

1
S17
5TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S38
1ST, 2ND MOTORS STOPPED
S18
SPEED OF FRONT SHEET EVALUATED BASED ON THE MEASURED TIME BETWEEN 3RD TO 5TH SENSORS
S39
5TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S19
SPEED OF FRONT SHEET =LOW SPEED ? (15.30rpm)
No
Yes
S40
SPEED OF FRONT SHEET EVALUATED BASED ON THE MEASURED TIME BETWEEN 3RD TO 5TH SENSORS
S20
1ST, 2ND MOTORS STOPPED, LOW MOTOR SPEED IS SET (FEEDING MOTOR, 1ST TO 3RD MOTORS)
S41
SPEED OF FRONT SHEET =LOW SPEED ? (15.30rpm)
No
Yes
S21
2ND MOTOR STARTED
S42
SPEED OF EACH MOTOR IS SET TO LOW LEVEL (FEEDING MOTOR, 1ST TO 3RD MOTORS)
1ST, 2ND MOTORS STARTED
S43
2

Fig. 23

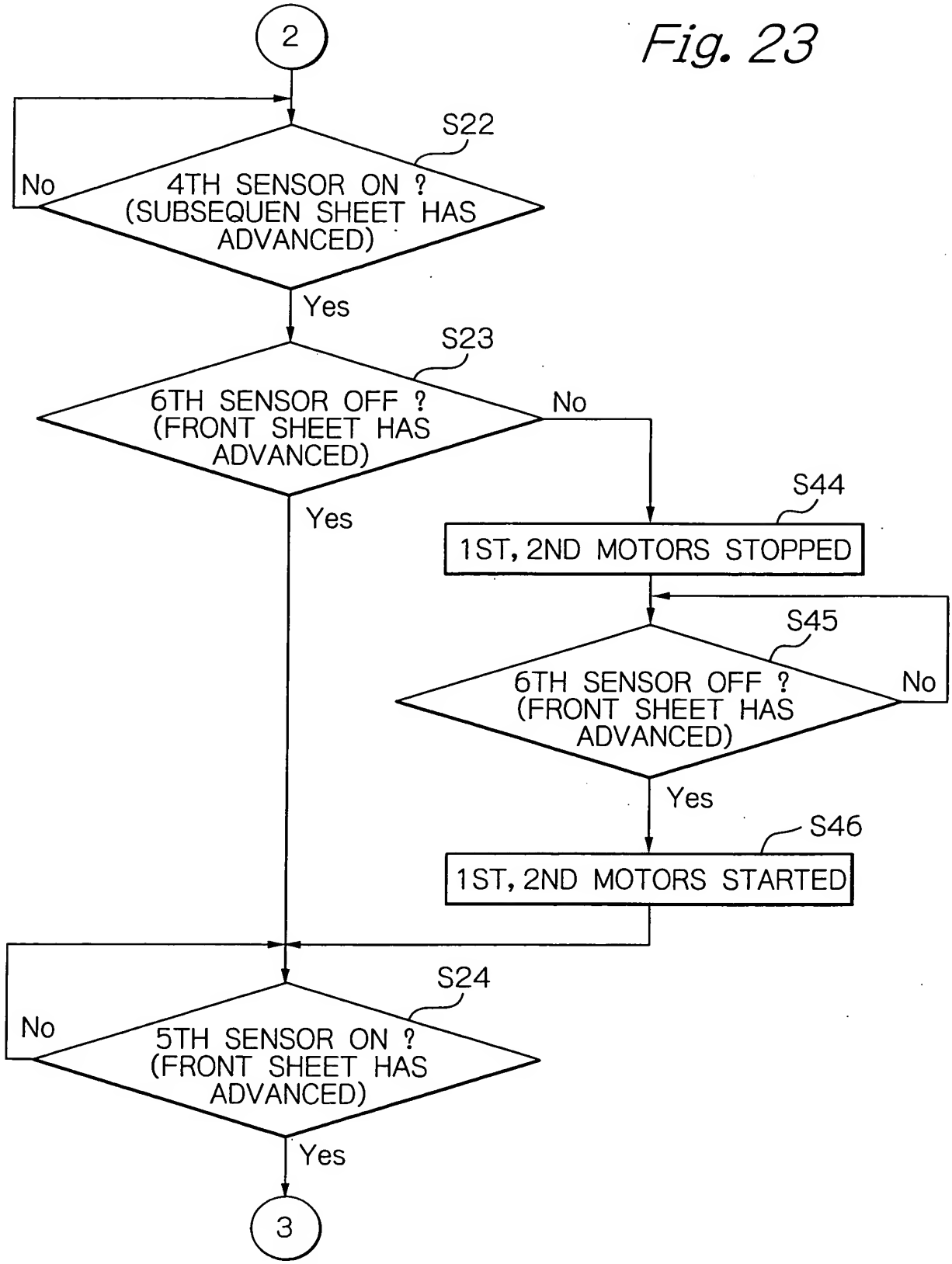

2
S22
No
4TH SENSOR ON ?
(SUBSEQUEN SHEET HAS
ADVANCED)
Yes
S23
6TH SENSOR OFF ?
(FRONT SHEET HAS
ADVANCED)
No
Yes
S44
1ST, 2ND MOTORS STOPPED
S45
6TH SENSOR OFF ?
(FRONT SHEET HAS
ADVANCED)
No
Yes
S46
1ST, 2ND MOTORS STARTED
S24
No
5TH SENSOR ON ?
(FRONT SHEET HAS
ADVANCED)
Yes
3

Fig. 24

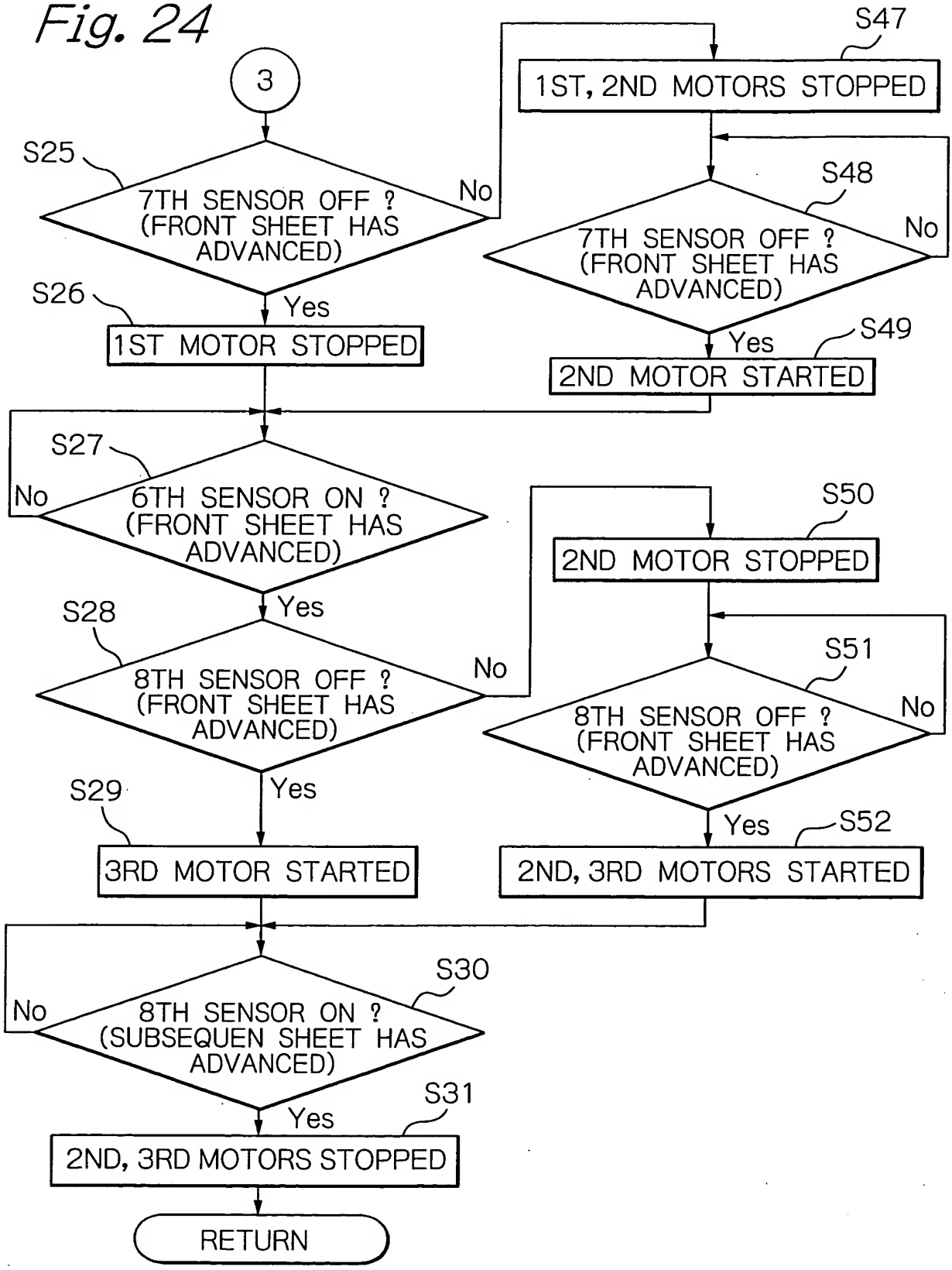

3
S25
7TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S26
1ST MOTOR STOPPED
S27
6TH SENSOR ON ? (FRONT SHEET HAS ADVANCED)
No
Yes
S28
8TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S29
3RD MOTOR STARTED
S30
8TH SENSOR ON ? (SUBSEQUEN SHEET HAS ADVANCED)
No
Yes
S31
2ND, 3RD MOTORS STOPPED
RETURN
S47
1ST, 2ND MOTORS STOPPED
S48
7TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S49
2ND MOTOR STARTED
S50
2ND MOTOR STOPPED
S51
8TH SENSOR OFF ? (FRONT SHEET HAS ADVANCED)
No
Yes
S52
2ND, 3RD MOTORS STARTED

Fig. 25

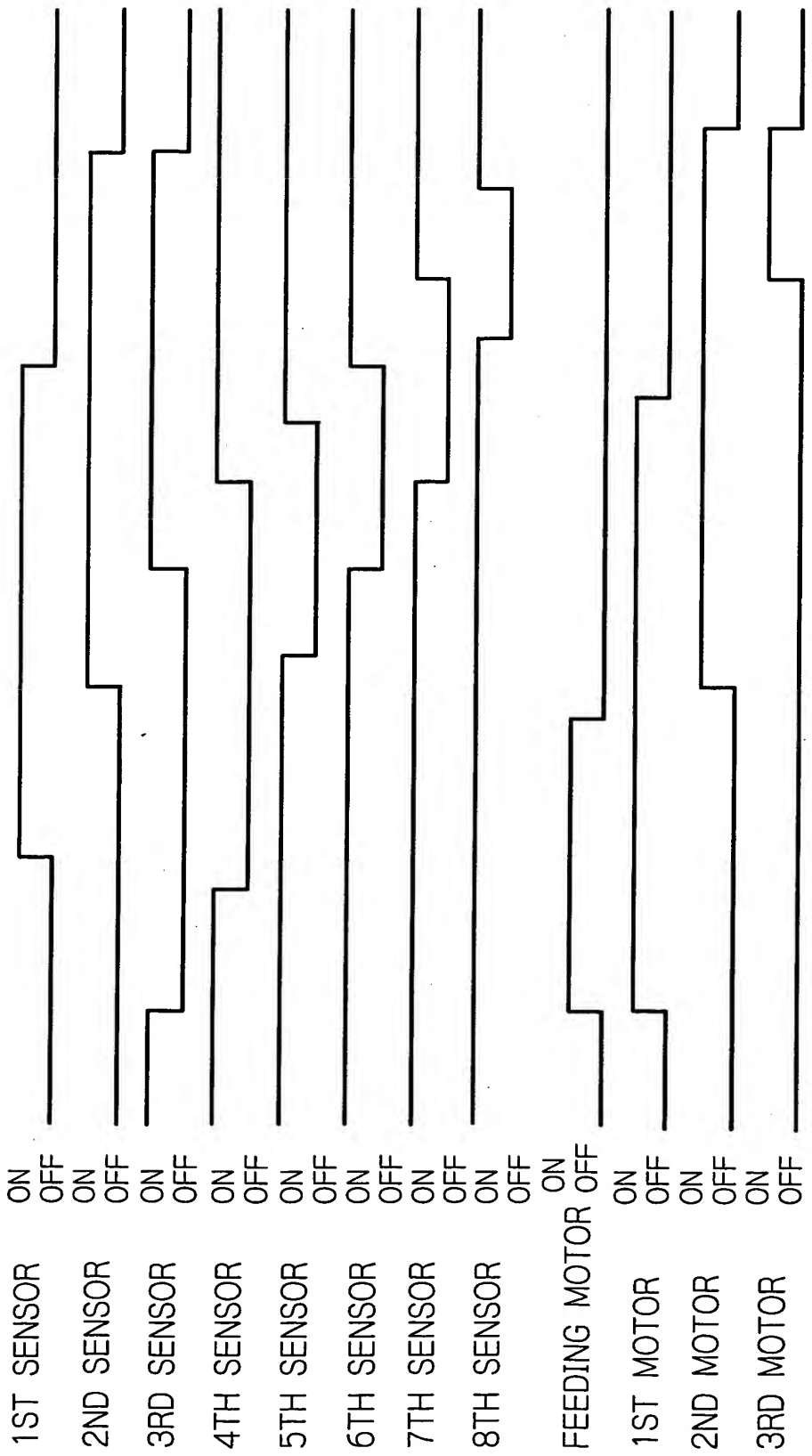

1ST SENSOR
2ND SENSOR
3RD SENSOR
4TH SENSOR
5TH SENSOR
6TH SENSOR
7TH SENSOR
8TH SENSOR
FEEDING MOTOR
1ST MOTOR
2ND MOTOR
3RD MOTOR
ON
OFF

Fig. 26A

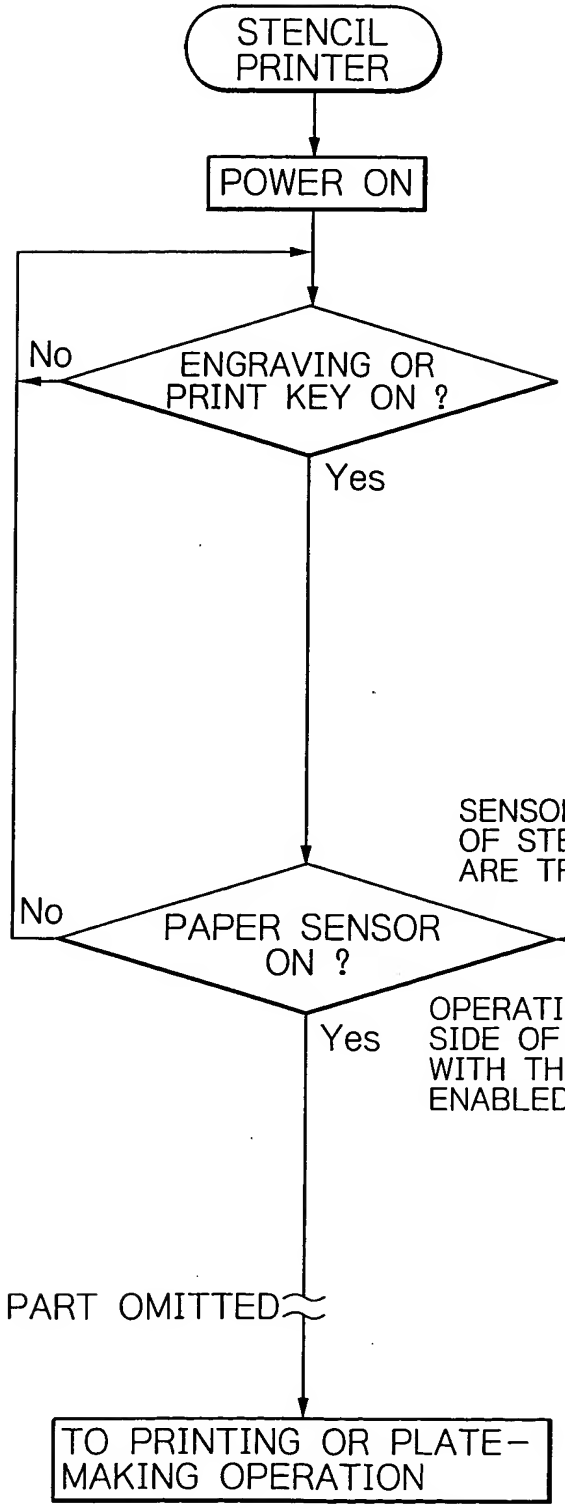


Fig. 26B

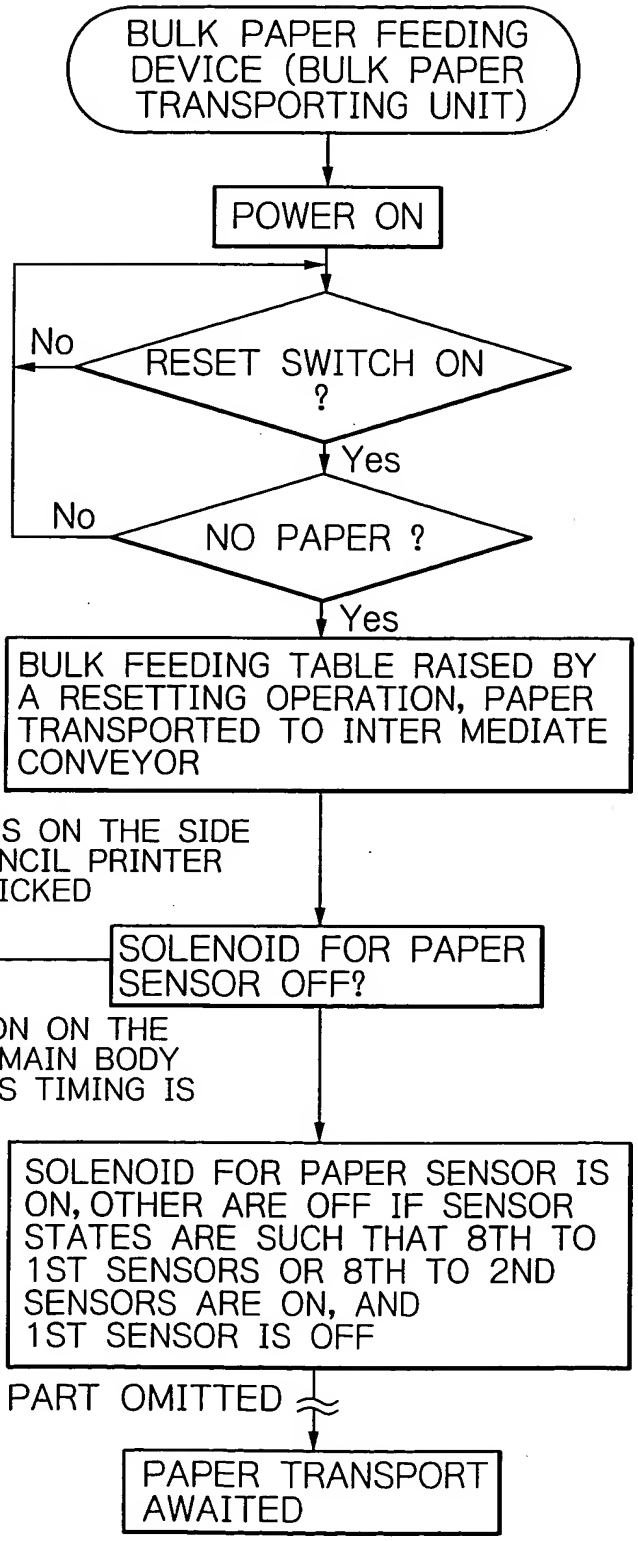


Fig. 27

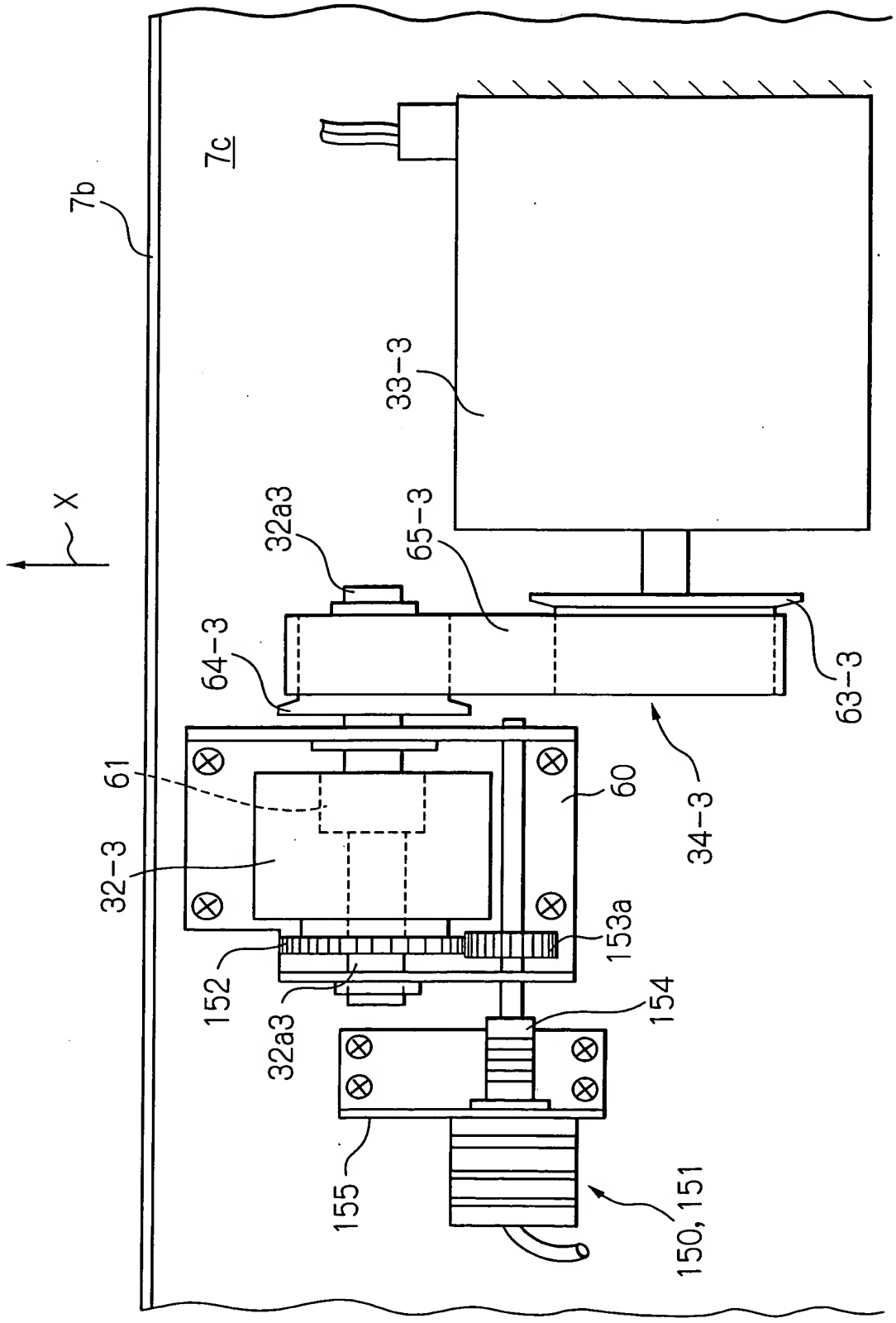

7b
7c
X
33-3
32a3
65-3
64-3
63-3
34-3
61
60
32-3
153a
152
154
32a3
155
150, 151

Fig. 28A

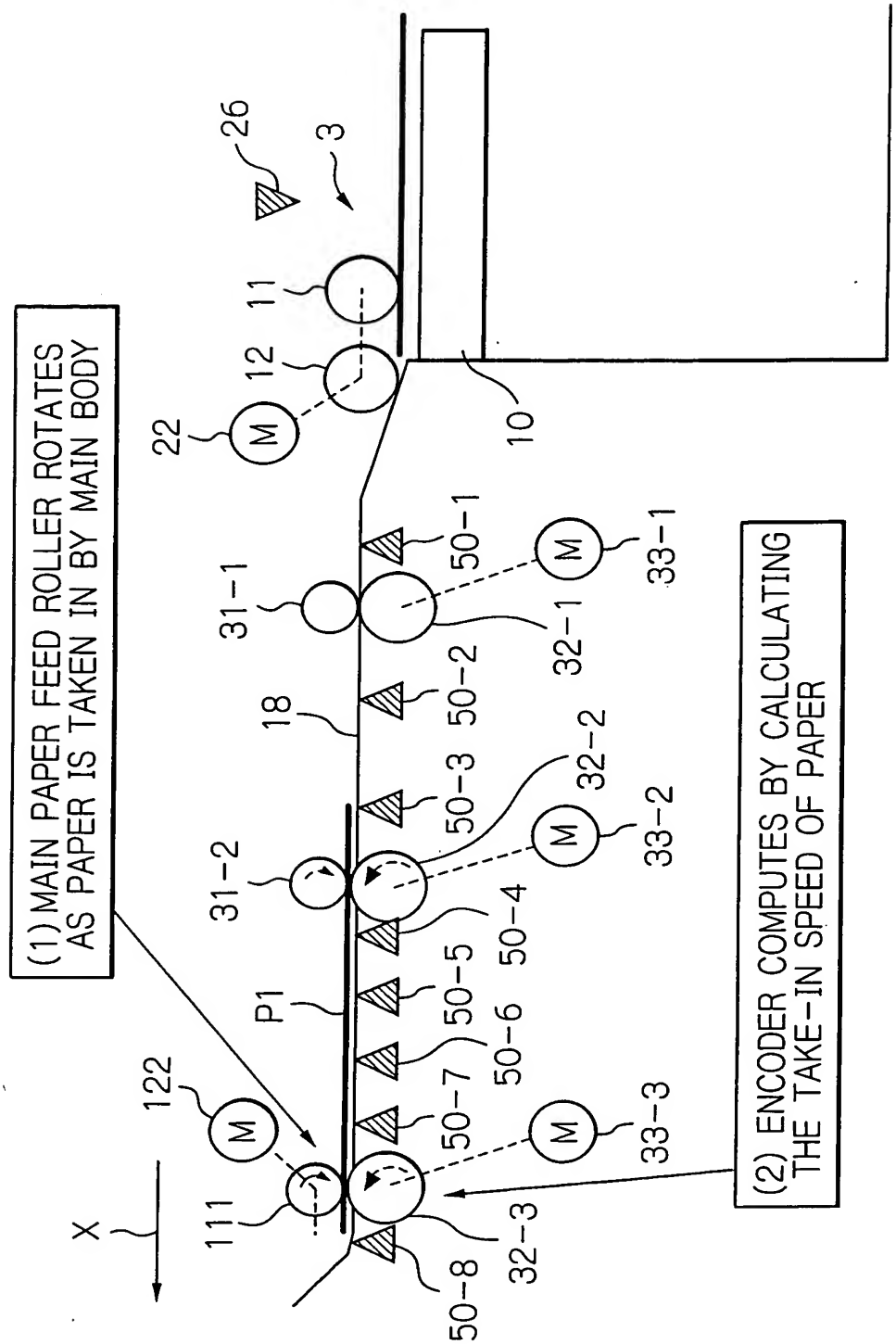

(1) MAIN PAPER FEED ROLLER ROTATES AS PAPER IS TAKEN IN BY MAIN BODY
(2) ENCODER COMPUTES BY CALCULATING THE TAKE-IN SPEED OF PAPER
26
3
11
12
22
10
31-1
50-1
32-1
33-1
18
50-2
50-3
32-2
31-2
33-2
50-4
P1
50-5
50-6
50-7
122
33-3
111
32-3
50-8
X

Fig. 28B

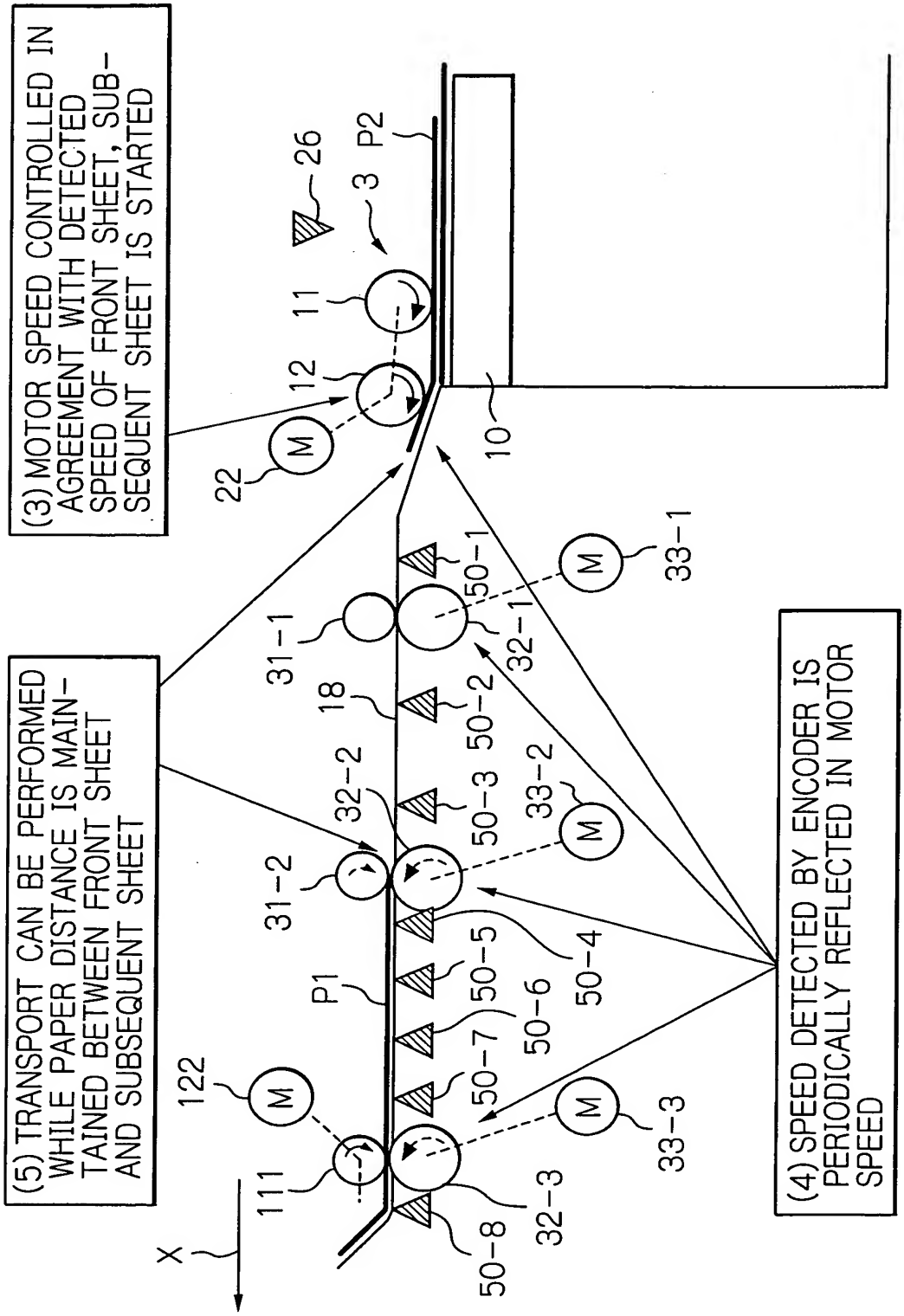

(3) MOTOR SPEED CONTROLLED IN AGREEMENT WITH DETECTED SPEED OF FRONT SHEET, SUBSEQUENT SHEET IS STARTED
(5) TRANSPORT CAN BE PERFORMED WHILE PAPER DISTANCE IS MAINTAINED BETWEEN FRONT SHEET AND SUBSEQUENT SHEET
(4) SPEED DETECTED BY ENCODER IS PERIODICALLY REFLECTED IN MOTOR SPEED
X
P1
P2
3
10
11
12
18
22
26
31-1
31-2
32-1
32-2
32-3
33-1
33-2
33-3
50-1
50-2
50-3
50-4
50-5
50-6
50-7
50-8
111
122
M

Fig. 29

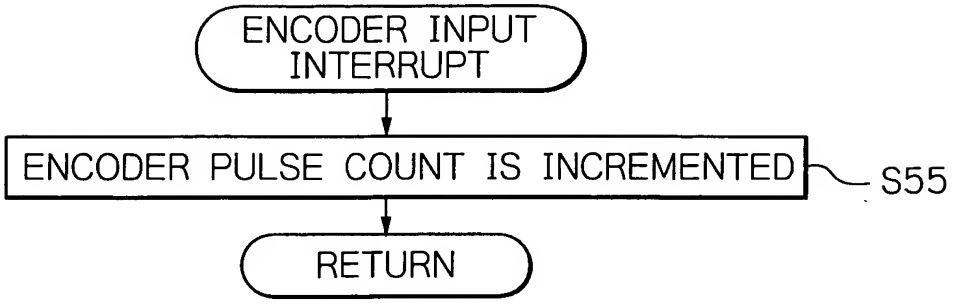

ENCODER INPUT INTERRUPT
ENCODER PULSE COUNT IS INCREMENTED
S55
RETURN

Fig. 30

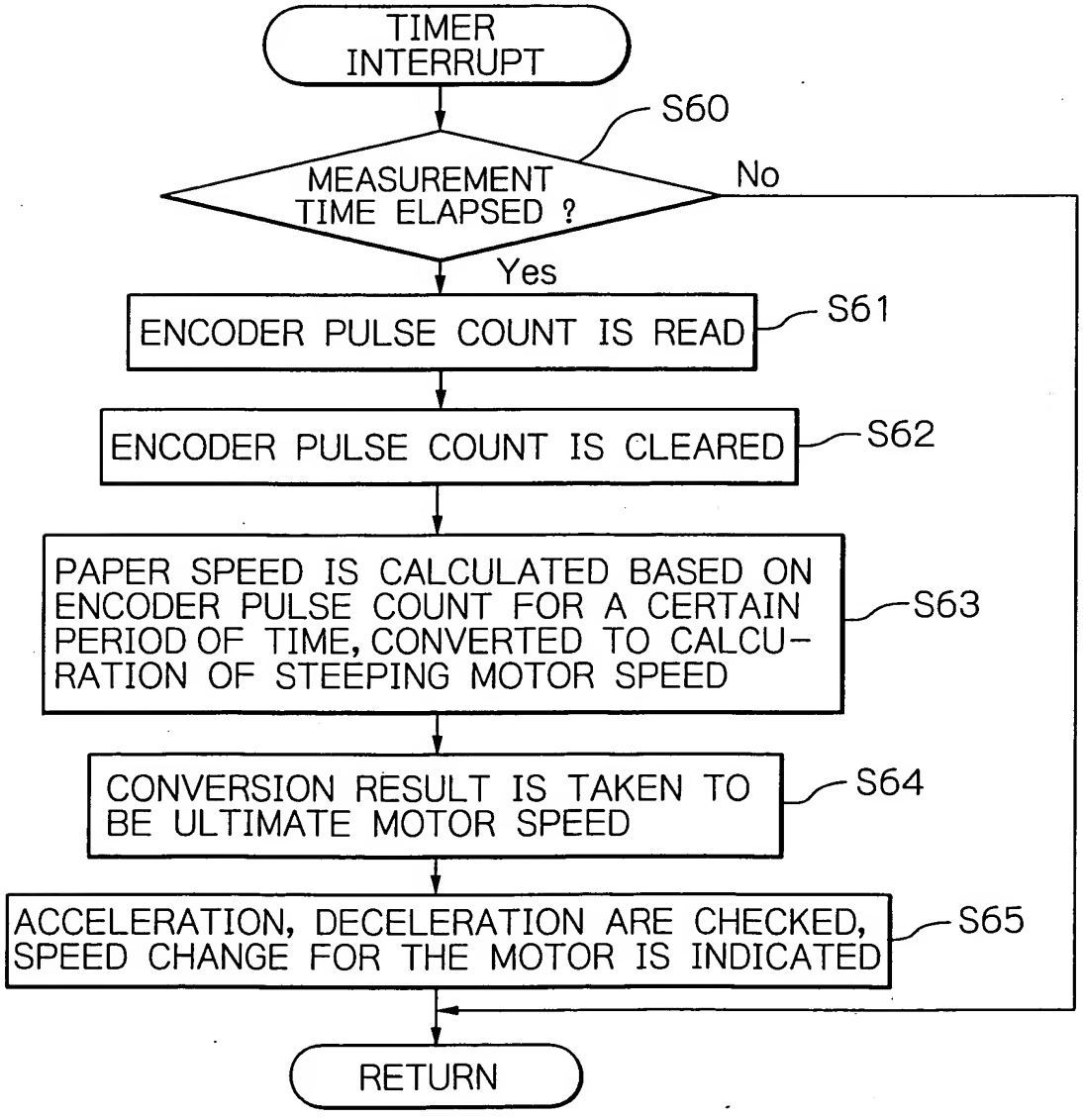

TIMER INTERRUPT
S60
MEASUREMENT TIME ELAPSED ?
No
Yes
ENCODER PULSE COUNT IS READ
S61
ENCODER PULSE COUNT IS CLEARED
S62
PAPER SPEED IS CALCULATED BASED ON ENCODER PULSE COUNT FOR A CERTAIN PERIOD OF TIME, CONVERTED TO CALCU-RATION OF STEEPING MOTOR SPEED
S63
CONVERSION RESULT IS TAKEN TO BE ULTIMATE MOTOR SPEED
S64
ACCELERATION, DECELERATION ARE CHECKED, SPEED CHANGE FOR THE MOTOR IS INDICATED
S65
RETURN

Fig. 31

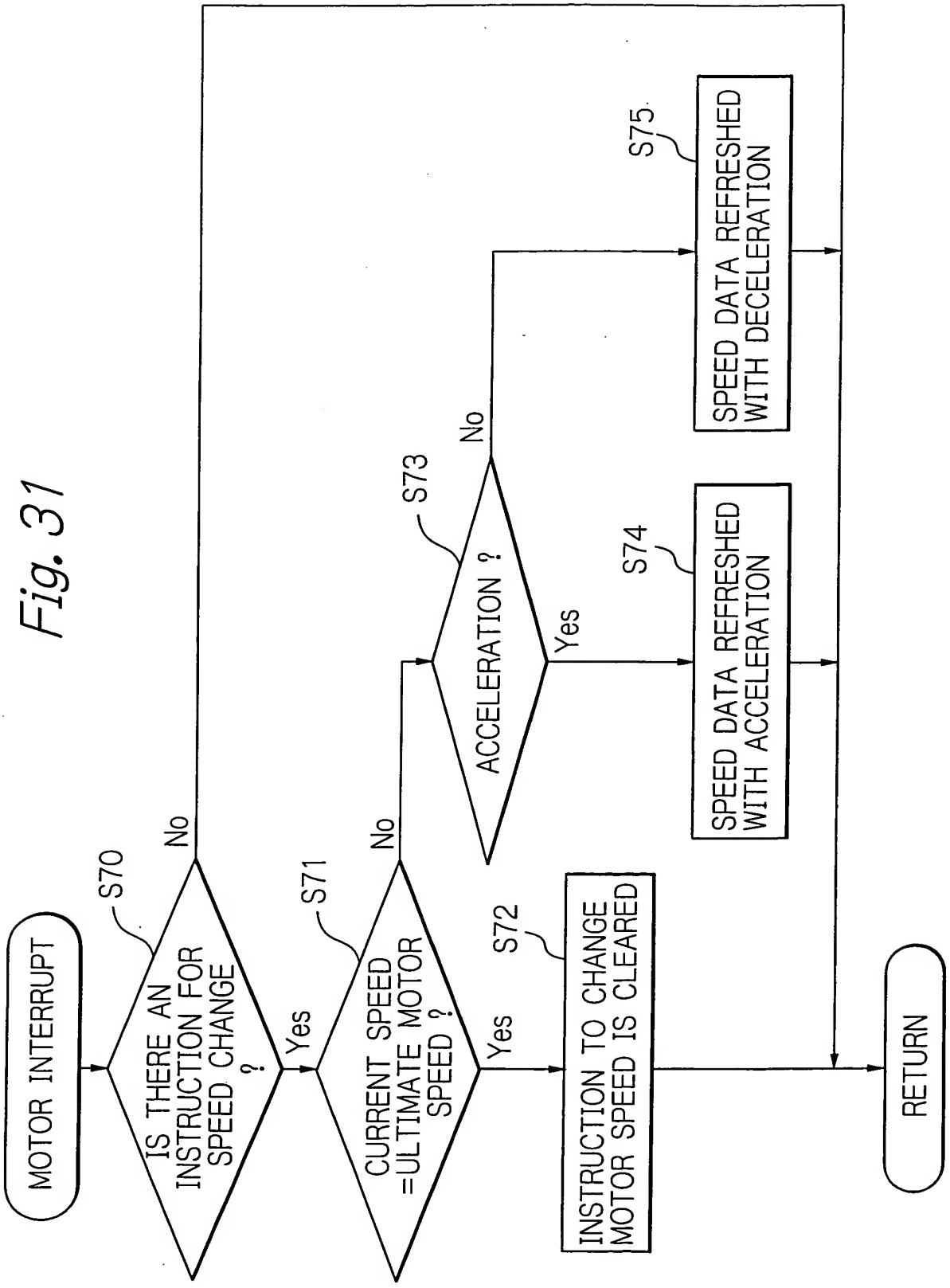
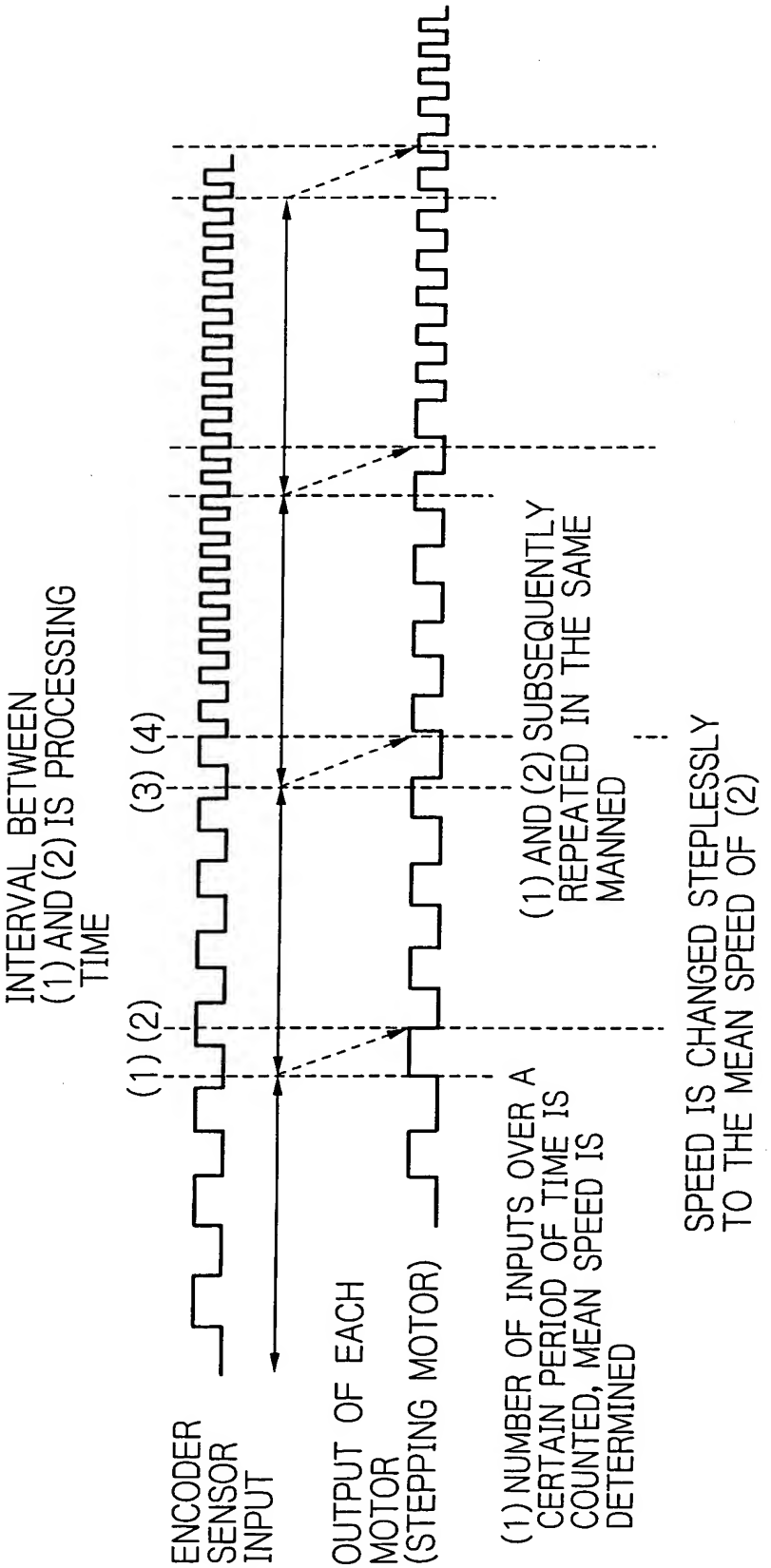

MOTOR INTERRUPT
S70
IS THERE AN INSTRUCTION FOR SPEED CHANGE ?
No
Yes
S71
CURRENT SPEED =ULTIMATE MOTOR SPEED ?
No
Yes
S72
INSTRUCTION TO CHANGE MOTOR SPEED IS CLEARED
S73
ACCELERATION ?
No
Yes
S74
SPEED DATA REFRESHED WITH ACCELERATION
S75
SPEED DATA REFRESHED WITH DECELERATION
RETURN

Fig. 32


INTERVAL BETWEEN (1) AND (2) IS PROCESSING TIME
(1) (2)
(3) (4)
ENCODER SENSOR INPUT
OUTPUT OF EACH MOTOR (STEPPING MOTOR)
(1) NUMBER OF INPUTS OVER A CERTAIN PERIOD OF TIME IS COUNTED, MEAN SPEED IS DETERMINED
(1) AND (2) SUBSEQUENTLY REPEATED IN THE SAME MANNED
SPEED IS CHANGED STEPLESSLY TO THE MEAN SPEED OF (2)